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17. ABSTRACT (MAX. 250 WORDS) Experimental classes were set up for academically superior students (Intelligence Quotient 120 and above) to compare the effectiveness of full-time, self-contained classes and part-time classes. Two experimental classes were begun for fourth through ninth grade students in each program, and were compared to equivalent control groups. Achievement tests given at the beginning and the end of the first year and at the end of the second year provided data for the following conclusions. The preponderance of the evidence indicates that, as a whole, the experimental groups achieved at a significantly higher level than the control groups. The analysis of the self-contained and part-time types of organization indicates that one is about as effective as the other. Peer relationships of the children in the experimental classes were not significantly affected by virtue of being in those classes. In the subjective evaluation, pupils, parents and teachers of experimental classes were favorably impressed with the results of the experimental program. Recommendations suggested that the program should be continued, but with better coordination of educational efforts and better provisions for selection, placement and release of pupils in special classes.							
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AN
EXPERIMENTAL PROGRAM
FOR
ACADEMICALLY
TALENTED
IN
ELEMENTARY SCHOOL

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SCHOOL DISTRICT OF KANSAS CITY, MO.
January 1961

AN EXPERIMENTAL PROGRAM IN EDUCATION
FOR
ACADEMICALLY TALENTED PUPILS IN ELEMENTARY SCHOOL

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THE SCHOOL DISTRICT OF KANSAS CITY, MISSOURI

JANUARY 1961

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AN EXPERIMENTAL PROGRAM IN EDUCATION FOR ACADEMICALLY
TALENTED PUPILS IN ELEMENTARY SCHOOLS

INTRODUCTION

Increasing national concern over the question of providing for the best utilization of academic talent in our nation has been reflected in numerous ways. Among these have been national testing programs to identify pupils who are academically talented, special plans to provide financial assistance to enable academically talented pupils to continue their educations, advanced standing and course credit in colleges and universities for work done in high school, and a proliferation of special organizations and curricula in elementary and secondary schools. All of these activities reflect the many different approaches to the question.

In Kansas City the decision to establish an experimental program was made with the thought that some form of special provision should be tried and that through experimentation an acceptable plan could be identified.

After some deliberation, the decision was made that the elementary school plan would focus around three elements. The first element involved establishing self-contained experimental classes in one school where a sufficient number of pupils could be drawn from the membership of that school. The second element was based upon a part-time organization, where children would be drawn from their regular classes for special sessions. The third element was concerned with the feasibility of transporting pupils to a center, established in one school, where self-contained classes would be organized.

HYPOTHESES

As the shape of the experimental program emerged, three hypotheses to be tested were formulated. These hypotheses included:

- A. No significant differences in academic achievement as measured by standardized achievement tests, between academically talented pupils in experimental programs and academically talented pupils not in experimental programs.
- B. No significant differences in academic achievement as measured by standardized achievement tests, between academically talented pupils in self-contained classrooms in the experimental program and academically talented pupils in part-time experimental programs.
- C. No significant differences in peer acceptance for three social situations between pupils in part-time experimental programs and pupils not in experimental programs.

INSTRUCTIONAL AND ADMINISTRATIVE ORGANIZATION AND CURRICULUM

Organization and Location of Classes. The instructional organization for this experiment is based upon four experimental groups and two control groups. The relationship of the experimental and control groups is shown below.

Among the schools in this study, the group designated as Control A and their associated experimental groups all draw pupils from economically favored areas. Control B schools and the schools from which the pupils were transported to the Scarritt classes draw pupils from areas

that are less favored economically, but not economically sub-standard.

In other words, pupils in Control B and the Scarritt experimental classes came from average circumstances.

Control

Experimental

Nelson }
Nichols }

Control A

Hale Cook
Border Star
Bryant

Bancroft }
Bristol }
Faxon }

Control B

Scarritt

At Hale Cook the first year experimental organization involved self-contained classes which met daily on the regular schedule for the school. Experimental classes were established with one section in each of grades 4, 5, 6, and 7. All of the pupils in the experimental classes were drawn from the pupil population at Hale Cook.

For Border Star and Bryant, the plan was for part-time experimental classes. One experimental section was selected for each of grades 4, 5, 6, and 7. Each experimental section met with the special teachers for approximately two hours per day. The remainder of the day was spent in the regular classroom. All of the pupils were drawn from the pupil population of the respective schools.

At Scarritt, self-contained classes were established with one experimental section in each of grades 4, 5, and 6. Classes met daily from 9:00 to 4:00. This schedule adjustment was necessary because here many of the pupils in the experimental sections were transported by bus from 10 surrounding schools. Eligible pupils at Scarritt were also enrolled in these classes.

The control groups were made up of pupils in schools similar to the schools in which experimental classes were located. From the control schools, all the pupils with measured intelligence comparable to the pupils in the experimental classes were identified and used to establish the control groups. Control A was made up of pupils from Nelson and Nichols schools, and Control B was composed of pupils from Bancroft, Bristol and Faxon schools.

Organizational Changes the Second Year. In the two schools participating in the experimental programs on the basis of self-contained classrooms for the academically talented, organizational changes were slight. Hale Cook School continued to maintain its special classes for the fourth, fifth, and sixth grades; the one change was the deletion of the seventh grade class from the program because of the shifting of all seventh grade pupils of the school to the newly opened neighboring junior high school. Scarritt School, operating as a center for academically talented students transported from feeder schools, continued its fourth, fifth, and sixth grade special classes; the change of significance in this school was the necessity to increase the number of feeder schools from 10 to 15. The attrition of class numbers due to families moving from the area, plus the difficulty in locating proper numbers of children of the area who were eligible for the classes, necessitated the greater radius in the circle of contributing schools. Improved arrangements for bus transportation to Scarritt made it possible to operate on the regular class time schedule.

The organizational changes in the two schools utilizing a plan of part-time segregation for the academically talented was of greater scope. Because of certain disadvantages of the organizational plan of instruction

for the year 1958-59, a change of time scheduling was deemed necessary. During the second year, therefore, the following plan was instituted: selected fourth grade pupils met with the special teacher one half-day a week; fifth and sixth grade pupils met as individual sections, according to grade level, two half-days a week; the seventh grade selected pupils were divided into two sections, and each section met with the special teacher two half-days a week. Under this plan, the special teacher was thus permitted one half-day a week for parent and student conference and for preparation. At each school, one teacher held the responsibility for the instruction and guidance of pupils of all four grade levels.

Personnel. A Consultant for the Education of the Academically Talented was appointed to coordinate the program at both elementary and secondary levels. She works closely with the principals and teachers in administering the program and in its organization and pupil selection, and assists with parent consultations. Individual and group conferences are held with the teachers, in which various teaching techniques are suggested, the values and achievements of the program are discussed, and new or different resource and instructional materials are presented. Bulletins offering teaching suggestions and bibliographic materials are dispersed both to teachers of experimental classes and to teachers of regular classes.

The teachers of the experimental classes were drawn from the city instructional staff. Each teacher had previously demonstrated successful teaching experience, and indicated a willingness to work with academically talented pupils.

During the first year of the program, 10 teachers participated as instructors for the experimental classes. Seven of these 10 taught in self-contained classrooms--four at Hale Cook, three at Scarritt. Three of

the 10 instructed 10 part-time classes: one teacher in each school worked with the fourth, fifth, and sixth grade pupils, and one teacher traveled between the two schools, teaching two sections of seventh graders at each school.

Because of program changes and because of the closing down of the seventh grade classes at the one self-contained school heretofore on a K-7 arrangement, the second year teaching staff for the experimental classes was reduced to eight. During the second year's program, then, there were three teachers in each of the schools with self-contained classes with each handling her assigned grade level class, fourth through sixth. One teacher in each of the schools with part-time classes handled one section each of pupils from grades 4 through 6, and two sections of seventh grade pupils. Of the eight teachers in the experimental program the second year, two were new to the program.

Selection of Pupils. The first step was to define the criteria that would be employed in selecting pupils for the experimental program. A measured IQ cut point of 120 was adopted, and used in conjunction with evidence relating to school achievement and adjustment.

The next step was to identify and locate the pupils who would qualify in terms of these criteria. In Kansas City, the individual intelligence testing program is organized to provide a Revised Stanford-Binet IQ for every pupil at some time during his first four years in school. By far the large majority of the tests are given in the kindergarten and first grade. The first city-wide group intelligence test, the Otis Beta, is given in the fifth grade. The principal of each elementary school was asked to report the pupils with measured IQ's of 120 and above. A tabulation of these pupils was made, and their geographical distribution noted. In the light of this

information, four experimental schools were selected.

Numbers of children involved in the experimental and control groups the first year are reported in the following table:

TABLE I
NUMBER OF PUPILS BY SCHOOL AND GRADE: FIRST YEAR

EXPERIMENTAL						CONTROL					
School	Grade					School	Grade				
	4	5	6	7	Σ		4	5	6	7	Σ
H. Cook	24	27	31	34	116	Nichols	24	19	31	38	112
B. Star	18	23	18	26	85	Nelson	7	15	12	9	43
Bryant	20	22	24	21	87	Sub-total	31	34	43	47	155
Sub-total	62	72	73	81	288						
Scarritt	25	28	29		82	Bancroft	11	12	15		38
						Bristol	14	17	9		40
						Faxon	1	6	10		17
						Sub-total	26	35	34		95
TOTAL EXP.	87	100	102	81	370	TOTAL CON.	157	69	77	47	250

During the course of the 1958-59 school year, there were six pupils who were withdrawn from the special classes at the parents' request; one from grade 7 at Hale Cook, one from grade 7 at Border Star, one each from grades 4, 5, and 7 at Bryant, and one from grade 5 at Scarritt.

The number of pupils involved in the experimental and control groups the second year are reported in Table II.

TABLE II
NUMBER OF PUPILS BY SCHOOL AND GRADE: SECOND YEAR

EXPERIMENTAL						CONTROL					
School	Grade					School	Grade				
	4	5	6	7	Σ		4	5	6	7	Σ
H. Cook	31	27	32	-	90	Control A	19	27	31	26	103
B. Star	16	14	15	14	59						
Bryant	10	15	20	11	56	Sub-total	19	27	31	26	103
Sub-total	57	56	67	25	205	Control B	23	20	23	-	66
Scarritt	21	26	27	-	74						
TOTAL EXP.	78	82	94	25	279	TOTAL CONT.	42	47	54	26	169

Curriculum. Regular grade level curricula were the bases for work in the self-contained experimental classes in both schools; the teacher and the pupils were encouraged to expand, to extend, and to explore all these learnings. Study of interest topics also was encouraged. Basic requirements of the classes, noted below, were met. This curricular pattern was basically the same for both years.

For the first year in the part-time classes, each grade level class met with its teacher daily for a period of one and one-half to two hours. During this period, pupils studied specific subjects from the regular program with their special class teacher; at this same time, it was expected that the regular classroom teacher would teach the same subjects. Because the pupils of high ability could be expected to move more quickly in these subjects, the teacher would be able to guide them into wider and deeper ranges of the subjects taught. At Bryant, the fourth and fifth grade special classes worked in Social Studies and Language Arts; the sixth and seventh in Language Arts and Arithmetic. At Border Star, the fourth, fifth, and sixth grades worked in Social Studies and Language Arts, the seventh in Language Arts and Arithmetic.

Curricular Changes. In all the experimental classes certain additions to the curriculum were made during the second year. Those classes operating on a self-contained pattern continued to use the basic grade level curriculum as the foundation for expansions and for penetrations in depth. However, two addition to this curriculum were required in the fifth and sixth grades: student group discussion of certain selected sets of library books, and oral reports of from five to twenty minutes duration, such reports to be given from notes only and to be accompanied by visual aids; some fourth grade students also participated in the giving of talks to their classmates.

Three of the four fifth and sixth grade self-contained classes were also requested to prepare written reports of some length on topics of their own choosing.

Because of difficulties in scheduling of classes, in synchronization of teaching time, and in numbers of children instructed each day by the special class teachers, the curricular change in the classes under the part-time plan was more drastic. These classes, from grades four through seven, were this year not on a basic curriculum plan. Instead, through the use of Language Arts in both its verbal and written phases as the continuing thread, the pupils were encouraged to explore many fields of interest and to share their findings with the class. Much stress was laid upon written and oral skill in communication. These classes, too, prepared the five and twenty minute talks, and written reports as a major part of their program. For both talks and written reports, bibliographies were required and extensive use of both the survey of literature and original source techniques was stressed; proper form and quality of content were emphasized. With the help of librarians, these children were introduced to, and made use of, all library resources.

Discussions of books in grades five through seven were also featured. Evaluations of these books by the pupils were made on the basis of styles of writing, character, and plot development, and effect upon the thoughts and emotions of the reader.

Because of these long term assignments, shorter individual and group projects and studies were guided by the teacher in regular class meetings; review of subjects studied revealed that all areas of study ordinarily encompassed in the elementary school curriculum, plus many that were not, were studied and discussed by one or more of each group.

Instructional Supplies. Classrooms varied as to adequacy and richness of materials. Those classrooms long established in the schools had a greater abundance of resources than did those rooms newly organized for these experimental classes. All such new rooms were allotted only the regular "new room" budget; hence, such rooms at Scarritt were meagerly supplied with supplementary materials, and frequently found it necessary to scavenge for items needed for proper enrichment. Rooms already established at Cook were more fortunate, but discovered that their supply of supplementary materials was soon consumed.

Provided to all participating classes the second year were sets of library books, rotated among the classes on grade level basis. These books were of required usage in the classes to assist in the accomplishment of the purposes of the classes.

Classroom Facilities. The two schools maintaining full-time experimental classes provided regular classroom space for these classes for both years of the program. Of the seven classes the first year, three were located in rooms of limited space; two of them being in a temporary annex in one school, one in a small room in the other. Another class in the latter of the two schools, while housed adequately as to space, was in a basement room where high windows were at ground level with the playground and whose door opened onto the girls' basement area. These facilities were improved the second year. The two "annex" rooms were shifted to the regular classrooms in the main building; and the two classes at the second school were transferred to regular classrooms.

A small house, remodeled into a classroom, served one of the schools participating in the part-time scheduling of classes. This "house" sat at the corner of the school lot. For the first year of the program, fourth,

fifth, and sixth grade experimental classes worked with the teacher in this classroom; the seventh grade sections met with their teacher in a corner of the Homemaking room. Because of the program changes for the second year, it was then possible for the seventh grade sections also to meet in the annex.

The second school on a part-time class schedule provided two small rooms for the classes during the first year. The fourth, fifth, and sixth grade sections met with their teacher in a small room originally designed for storage space. The two seventh grade sections met in a small room that had been used as the book storage room. For the second year, due to the pressures of enrollment at the school, this seventh grade space was taken for incorporation into a remodeled room. During the second year, therefore, the seventh grade sections also met in the room provided the fourth, fifth, and sixth grade special classes. Instructional space was quite limited.

COLLECTION OF DATA

In order to accumulate the necessary information to explore the hypotheses, a systematic design for the collection of data was developed. Several different areas were involved, including the results of standardized achievement tests, an inquiry into the peer relationships among the pupils, and opinionnaires for pupils, teachers, principals and parents.

Standardized Achievement Tests. During the first year, standardized achievement tests were administered to the control and experimental groups in the fall and again in the spring. This provided measures showing measured growth over the course of the first year's instruction. During the second year, the pupils who had been in the program the first year were tested in the spring. For pupils entering the program for the first time in the fourth grade, tests were given in the fall and also in the spring. The tests

chosen for these purposes involved two achievement series. In order to secure as complete curriculum coverage as could be obtained, the actual subject areas tested include most of the basic subject areas commonly included in the elementary curriculum. The two achievement series used were the Science Research Associates Achievement Series, which includes sub-tests in Work-Study Skills, Reading, Language Arts, and Arithmetic; and the California Tests in Social and Related Sciences. The CTSRS series includes three parts. Part I tests information about the American Heritage, and Peoples of Other Lands and Times. Part II includes Geography and Basic Social Processes. Part III tests knowledge of Elementary Science, Health and Safety. Different forms of each test were used in the fall and the spring testing. The SRA Achievement Series, Grades 4 to 6, requires some 352 minutes of actual testing time, and the SRA 6 to 9 Series requires some 305 minutes. The SRA Achievement Series for Grades 4 to 6 was used with grades 4 and 5 of the study group. The series for Grades 6 to 9 was used with grades 6 and 7 of the sample. The California Test in Social and Related Sciences requires 170 minutes of actual testing time. Since this test is standardized to grades 4 through 8, the same test was used with all grades and sections of the sample.

Peer Relationships. Sociometric data for both the control and experimental groups were collected during the first year in the fall and again in the spring. These data pertained to three different social situations. The first social situation included was concerned with the relationships that existed among the pupils in the class, and involved the number of times children would be chosen as companions for study purposes. The second social situation was concerned with the relationships that would exist among the children on the playground. The third social setting was concerned with the children that would be chosen as those with whom others would most

like to go to a party. Analysis of these data was based upon the number of times academically talented children were chosen for the different activities, and also whether or not there was a difference in terms of the number of times academically talented children were chosen with respect to the type of social situation in which the choosing was made.

Opinions. Pupils were asked to help evaluate their experiences by responding to such questions as, "What they had liked or disliked about the class", "Things they would have liked to do, or have studied", "The length of the class period for those in the part-time program", "Participation in school activities", and, for those transported from surrounding schools, the experiences involved in changing schools.

Parents were also involved in the evaluation in that they were requested to respond to items designed to elicit opinions in such areas as changes in the child's attitude toward school, his attitudes at home, and changes in neighborhood friendships.

Teachers of the experimental classes were asked to identify major values of the program, to point up major disadvantages or difficulties that they had encountered, and to give their opinion as to the effect of the program on the interpersonal relationships among the children within the school. They were also asked to indicate ways in which the program might be improved. Teachers of the regular classes were asked to respond to questions about whether or not the special classes had helped and facilitated their regular classroom work or whether, on the other hand, experience in the experimental class had seemed to be detrimental to regular class work. They were also asked to state what effect, if any, this special program had on the social development or adjustment of the pupils in their rooms.

MEASURED INTELLIGENCE

The first step in comparing the control and experimental groups was to establish the comparability of the two groups with respect to measured intelligence. Every pupil in each of the groups had been examined with the Revised Stanford-Binet Intelligence Scale. These scores were tabulated and the mean for each group calculated by grade level. The mean IQ scores for the control and experimental groups, by grade level and school, are reported in Table III.

TABLE III

COMPARISON OF EXPERIMENTAL AND CONTROL GROUP
INDIVIDUAL INTELLIGENCE TEST SCORES

Grade	Control A	H. Cook	B. Star	Bryant
4	127.77	126.89	130.50	124.70
5	126.20	128.08	130.80	127.95
6	127.23	125.53	129.15	128.15
7	124.41	130.61*	127.50	123.96
	Control B	Scarritt		
4	126.64	124.35		
5	124.71	125.13		
6	127.00	124.30		

* First year only - no seventh grade second year

Examination of Table III shows that the control and experimental groups demonstrated approximately the same level of measured intelligence. Differences of the magnitude obtained here are within the limits that would be expected to occur as a result of chance fluctuations. Accordingly, so far as expected level of achievement based upon measured intelligence is concerned, comparability of the control and experimental groups may be assumed.

MEASURED ACHIEVEMENT

When the results of the achievement tests administered to the pupils in the experimental and control groups had been tabulated, it was then possible to make comparisons between the groups. Pupils with measured intelligence test scores of 120 and above were identified and drawn from the J. C. Nichols and Nelson schools to form a control group. This control group is known as Control A, and served as the criterion for comparison with the experimental groups in the Hale Cook, Border Star and Bryant elementary schools. Pupils in the Scarritt school were the experimental group transported by bus from the surrounding feeder schools. The control group for these pupils was made up originally of the pupils with measured IQ of 120 and above, in the Bancroft, Bristol and Faxon schools. This group was designated as Control B. Throughout the comparisons which follow, the control groups will be identified as either Control A or Control B.

In order to take advantage of the possibilities inherent in the two-year operation, the achievement test results were converted to grade equivalents and reported as gains over a two-year period. These were tabulated for each test for each experimental and control situation. The results of these tests are reported in Table IV.

The figures reported in Table IV show the beginning grade equivalent for each group at each level, and show also the end grade equivalent for each group at each level. In addition, the amount of gain over the two-year period was computed and is reported there. Test results for the SRA Achievement Series and the California Tests in Social and Related Sciences are reported separately in Table IV.

In order to show graphically the amount of gain and the level at which

TABLE IV

COMPARISON OF GAIN OVER TWO YEAR PERIOD FOR COMBINED ACHIEVEMENT TEST RESULTS, GRADES 4 THROUGH 7

SRA ACHIEVEMENT SERIES

Grade	Subject	Cont. A	Gain	H. Cook	Gain	B. Star	Gain	Bryant	Gain	Cont. B	Gain	Scarritt	Gain
Begin 4 to End 5	Wk-St.	6.2 -	8.1	1.9	6.1 -	8.8	2.7	5.5 -	8.6	3.1	6.0 -	8.3	2.3
	Rdg.	5.9 -	8.3	2.4	6.3 -	8.9	2.6	5.4 -	9.0	3.6	6.1 -	8.7	2.6
	L. A.	6.5 -	8.9	2.4	6.3 -	8.9	2.6	5.3 -	8.2	2.9	5.7 -	7.8	2.1
	Arith.	4.9 -	6.9	2.0	5.2 -	7.8	2.6	4.7 -	7.3	2.6	5.0 -	7.0	2.0
Begin 5 to End 6	Wk-St.	7.3 -	10.5	3.2	7.1 -	12.1	5.0	6.8 -	11.8	5.0	6.7 -	10.2	3.5
	Rdg.	6.9 -	10.2	3.3	6.7 -	11.1	4.4	7.2 -	11.1	3.9	6.9 -	10.2	3.3
	L. A.	7.0 -	9.3	2.3	7.2 -	11.9	4.7	6.9 -	11.5	4.6	7.1 -	10.1	3.0
	Arith.	6.6 -	8.3	1.7	6.4 -	10.3	3.9	6.1 -	9.4	3.3	6.2 -	8.2	2.0
Begin 6 to End 7	Wk-St.	9.7 -	11.6	1.9				9.2 -	13.0	3.8	9.0 -	13.0	4.0
	Rdg.	9.6 -	10.9	1.3				9.7 -	12.2	2.5	9.5 -	11.8	2.3
	L. A.	9.5 -	11.3	1.8				8.7 -	11.7	3.0	8.3 -	11.0	2.7
	Arith.	7.2 -	10.7	3.5				7.2 -	11.4	4.2	7.1 -	10.9	3.8
CALIFORNIA TESTS IN SOCIAL AND RELATED SCIENCES													
$\bar{X}$		7.3	9.6	2.3	6.4	10.0	3.6	6.9	10.4	3.5	7.0	9.8	2.8
Begin 4 to End 5	Pt. I	5.0 -	9.0	4.0	5.6 -	9.0	3.4	3.8 -	9.4	5.6	3.9 -	8.1	4.2
	Pt. II	5.2 -	9.4	4.2	5.3 -	9.8	4.5	5.1 -	8.5	5.4	4.8 -	9.2	4.4
	Pt. III	6.0 -	9.0	3.0	6.5 -	9.3	2.8	5.6 -	11.4	5.8	5.8 -	8.1	2.3
	Pt. I	7.0 -	9.8	2.8	6.8 -	10.0	3.2	6.3 -	10.3	4.0	5.9 -	9.4	3.5
Begin 5 to End 6	Pt. II	7.1 -	10.4	3.3	6.8 -	10.4	3.6	6.3 -	10.5	4.2	5.9 -	9.8	3.9
	Pt. III	8.1 -	9.6	1.5	8.2 -	10.0	1.8	7.6 -	10.0	2.4	7.2 -	9.6	2.4
	Pt. I	9.4 -	10.6	1.2				8.9 -	10.8	1.9	8.5 -	11.0	2.5
	Pt. II	9.4 -	10.2	0.8				9.5 -	10.8	1.3	8.7 -	10.7	2.0
Begin 6 to End 7	Pt. III	9.2 -	9.7	0.5				9.3 -	10.2	0.9	8.6 -	10.2	1.6
	$\bar{X}$	7.4	9.7	2.3	6.5	9.8	3.3	6.9	10.2	3.3	6.6	9.6	3.0
	$\bar{X}$	7.4	9.7	2.3	6.5	9.9	3.4	6.9	10.3	3.4	6.8	9.7	2.9
	$\bar{X}$	7.4	9.7	2.3	6.5	9.9	3.4	6.9	10.3	3.4	6.8	9.7	2.9

Part I - American Heritage - People of Other Lands and Times

Part II - Basic Social Processes - Geography

Part III - Health: and Safety - Elementary Science

these gains occurred, graphs were prepared and are included among the following pages.

Gains, as measured by test results over the two-year period, for those pupils who entered the first year as fourth graders are depicted in Figure 1. Figure 1 is based upon the test results of the SRA Achievement Series that includes the sub-scores for Work-Study Skills, Reading, Language Arts and Arithmetic. Examination of Figure 1 reveals the wide variation that occurs from school to school in the subject areas tested.

In addition, Figure 1 has information that is not reported in Table IV. The broken line that occurs in each of the subject area reports by schools, indicates the achievement test result at the end of the first year. This makes possible a comparison of the amount of growth for the first year with the amount of growth for the second year.

Comparisons of first and second year growth for the grade four through grade five group shows that the rate of growth throughout the two-year period was not consistent. For example, in the Work-Study areas it is noticeable that the experimental groups achieved significantly more the second year than did the control groups. This may indicate a cumulative effect with the second year showing the greatest amount of gain because of the previous learnings of the year before. In Reading, the second year growth for Border Star is particularly noticeable by the much larger gain the second year. Also it should be noted that for Control B the second year did not show as much gain in Reading as had the first year. In the area of the Language Arts, attention should be directed to the growth shown by the Scarritt group, where a gain of almost two years during the second year was demonstrated. While there is some variation among the gains made in Arithmetic between the first and second year, the gains were not as striking as they were for

the Work-Study area, Reading at Border Star, and Language Arts at Scarritt.

Figure 2 shows the gain over the two-year period on the SRA Achievement Series for the group of pupils who started their experimental program in the fifth grade. Here the two-year period includes grade five through grade six. Note, that as would be predicted, the level of achievement as indicated by the standardized achievement test is substantially higher for the five through six grade span than it had been for the four through five span. Also, since the figures are again reported as grade equivalents, it is immediately noticeable that the amount of gain demonstrated for the five through six group is much greater than that demonstrated for the four through five group. (1). For this grade range, it is apparent that, almost without exception, the second year showed greater growth. This was true both for the experimental and the control groups, with the possible exception of Control A in Arithmetic. It is also noticeable that at the end of the two year period the differences among the schools was noticeably greater than it had been at the beginning of the two-year period, indicating differential growth increments.

Figure 3 shows the gain over the two-year period on the SRA Achievement Series for the grade levels six through seven. Figures for these comparisons were available only for Control A and the two part-time experimental situations at Border Star and Bryant. The seventh grade at Hale Cook had been taken out of the school and placed in a newly opened junior high school. Again, it is noticeable that the level of achievement was substantially higher for the six-seven group than it was for the five-six group.

Here it is very obvious that, over the two-year period, the experimental group had demonstrated greater gain than the control group in all of the areas tested, with the possible exception of the comparison between

Bryant and Control A in Arithmetic. Also it is noticeable that for the experimental groups the second year increments were greater than the first year in the areas of Work-Study and Reading, while in Language Arts and Arithmetic the increments were not so much different the second year than they had been the first year. For the Control group, the second year increments were much the same as the first year increments with the exception of Arithmetic, where Control A showed much greater growth the first year.

Figure 4 shows the average gain on the SRA Achievement Series over the two-year period that is based on a composite of all grades for both years. The grade equivalent limits for this table were defined by summing the marks obtained for all areas of the achievement test by all of the grade levels involved in the school setting at the beginning of the experimental period. The same procedure was followed at the end of the two-year period, and the amount between the two points represents the increment in growth that occurred over that period. Two exceptions must be noted. For Hale Cook there was no seventh grade the second year, and for Scarritt there was no seventh grade included in the organization. This means that it is quite possible that had seventh grade pupils been available for inclusion into the composite score, that the upper limit for Hale Cook and for Scarritt might have been substantially higher. This statement would also apply to Control B. Examination of Figure 4 shows that throughout the series the experimental groups demonstrated greater growth than the control groups, as measured by the standardized achievement tests used.

In order to assess the statistical significance of the differences between the experimental and control groups on the amount of gain demonstrated over the two-year period, the difference between beginning and end score was computed for each pupil. Distributions of differences were thus obtained

Fig. 1 GAIN OVER TWO YEAR PERIOD ON SRA ACHIEVEMENT SERIES FOR CONTROL AND EXPERIMENTAL GROUPS, GRADES 4 THROUGH 5, BY SUBJECT AREAS

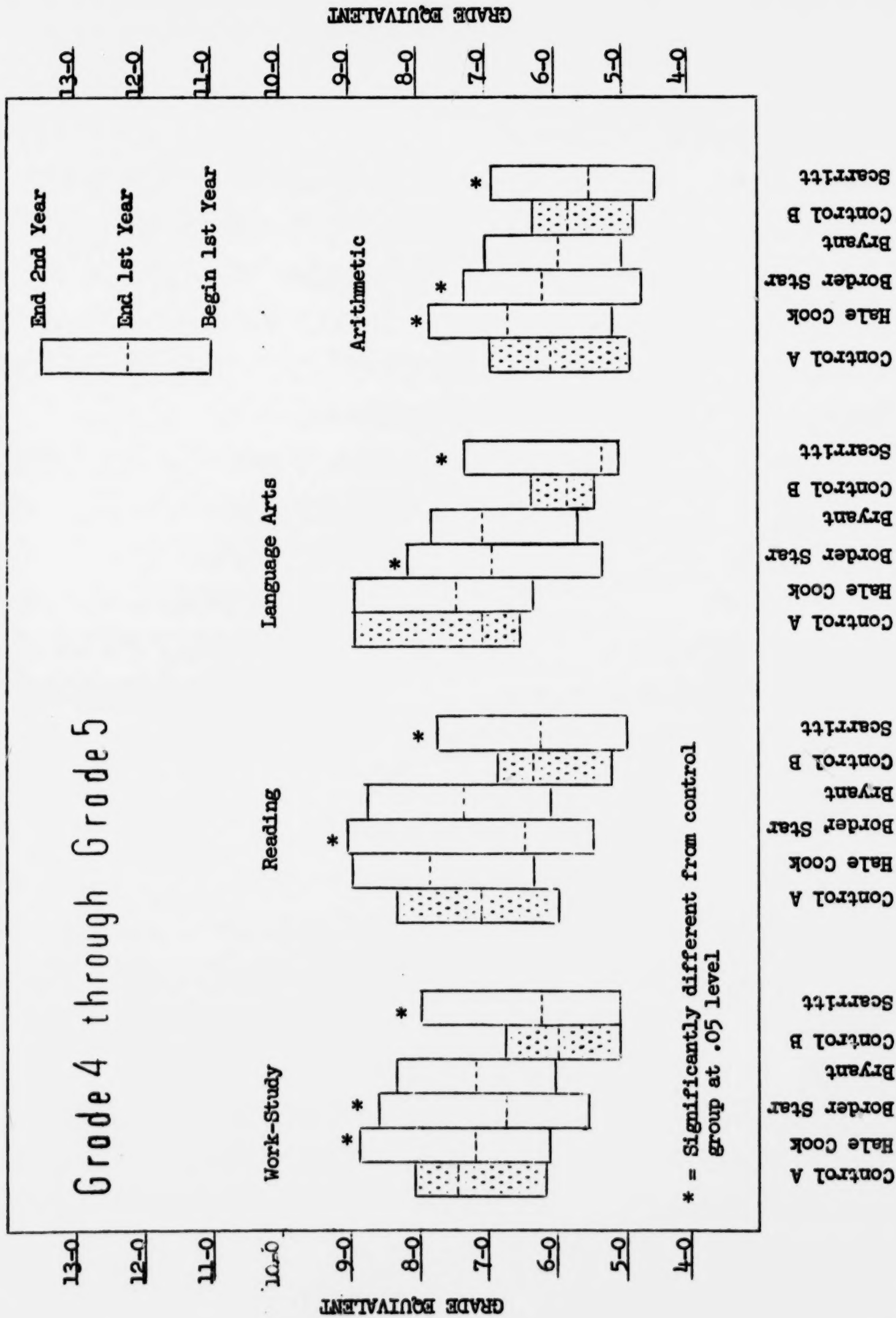


Fig. 2 GAIN OVER TWO YEAR PERIOD ON SRA ACHIEVEMENT SERIES FOR CONTROL AND EXPERIMENTAL GROUPS, GRADES 5 THROUGH 6, BY SUBJECT AREAS

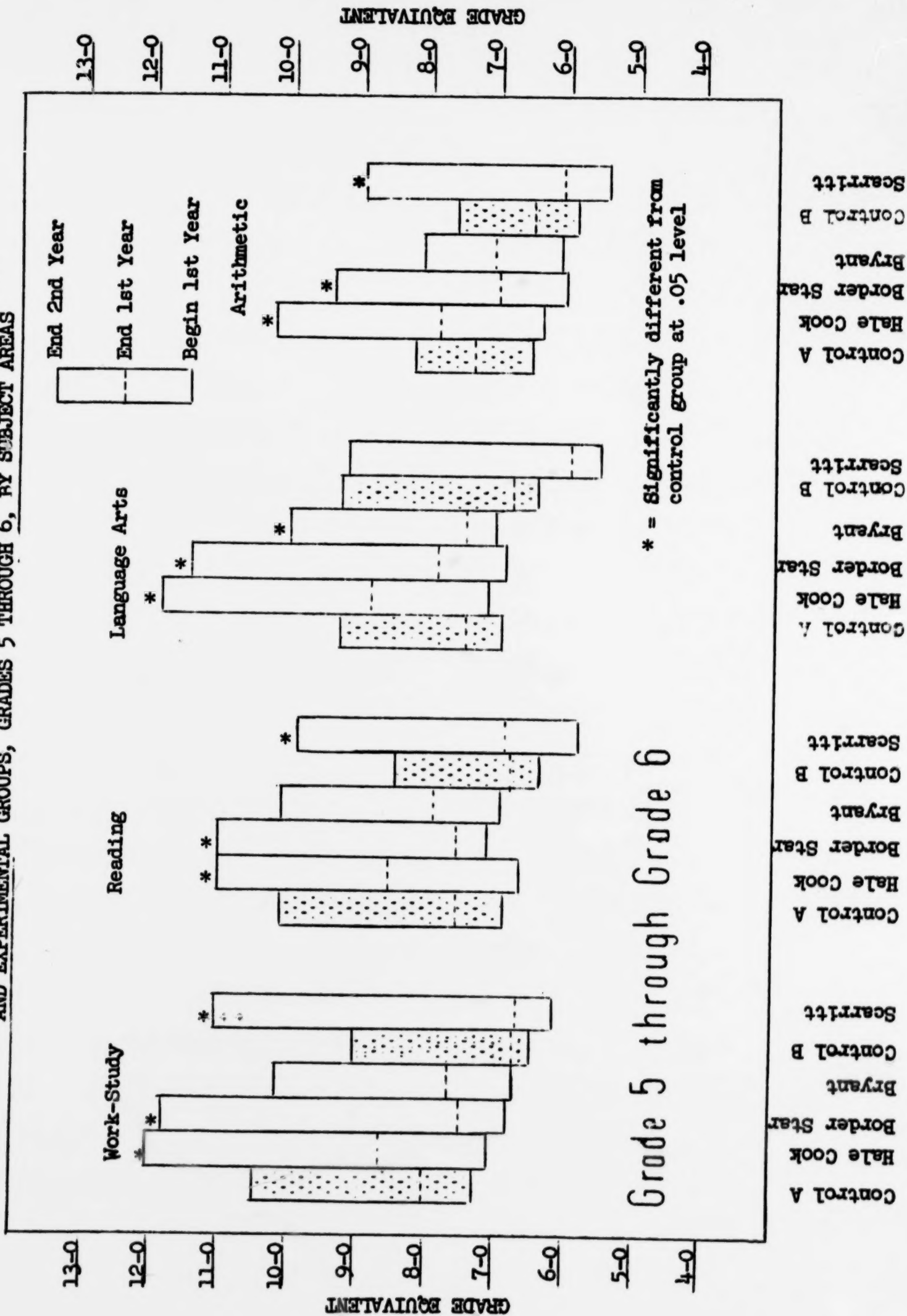


Fig. 3 GAIN OVER TWO YEAR PERIOD ON SRA ACHIEVEMENT SERIES FOR CON-
TROL AND EXPERIMENTAL GROUPS, GRADES 6 THROUGH 7, BY SUBJECT AREAS

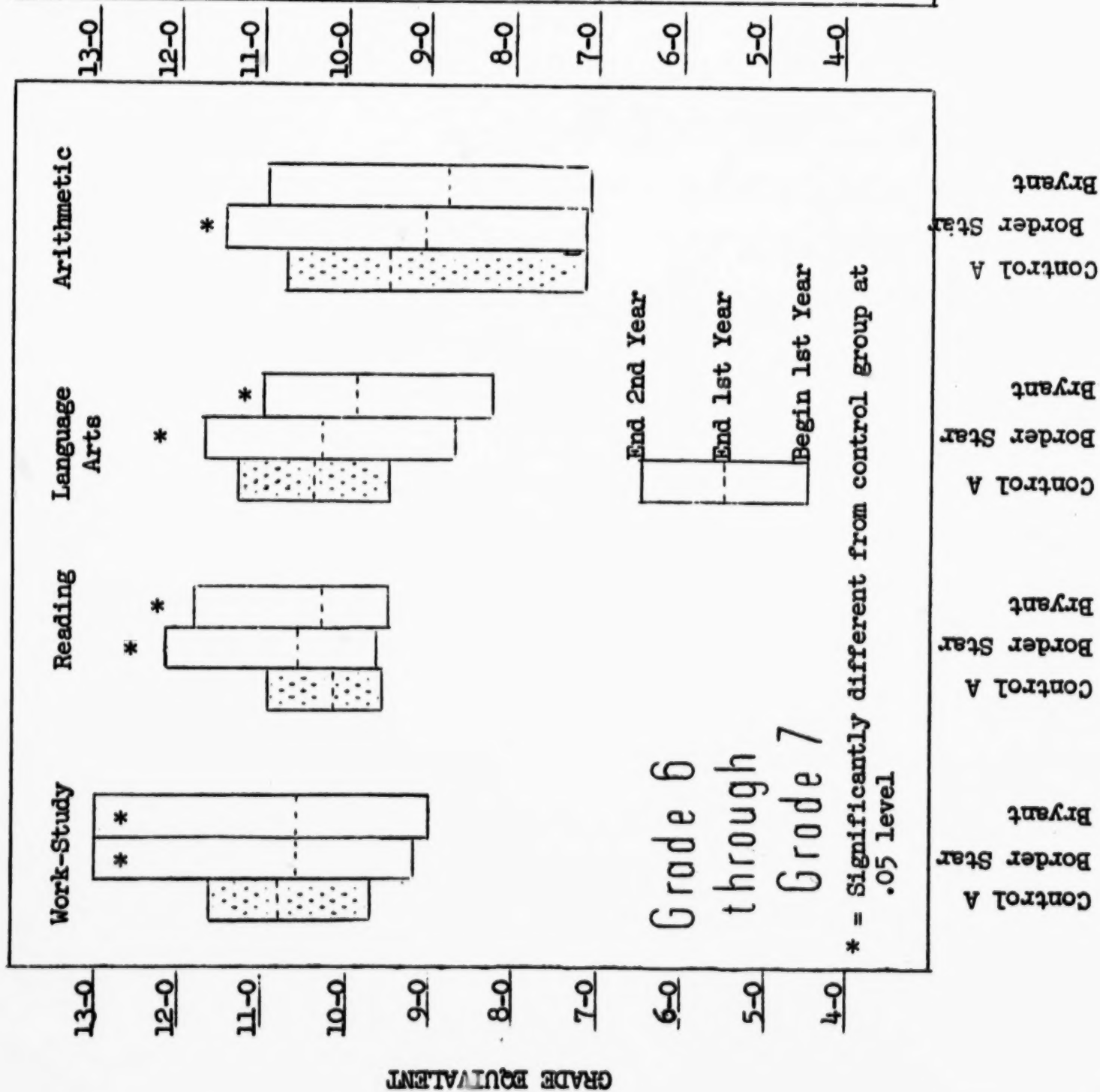
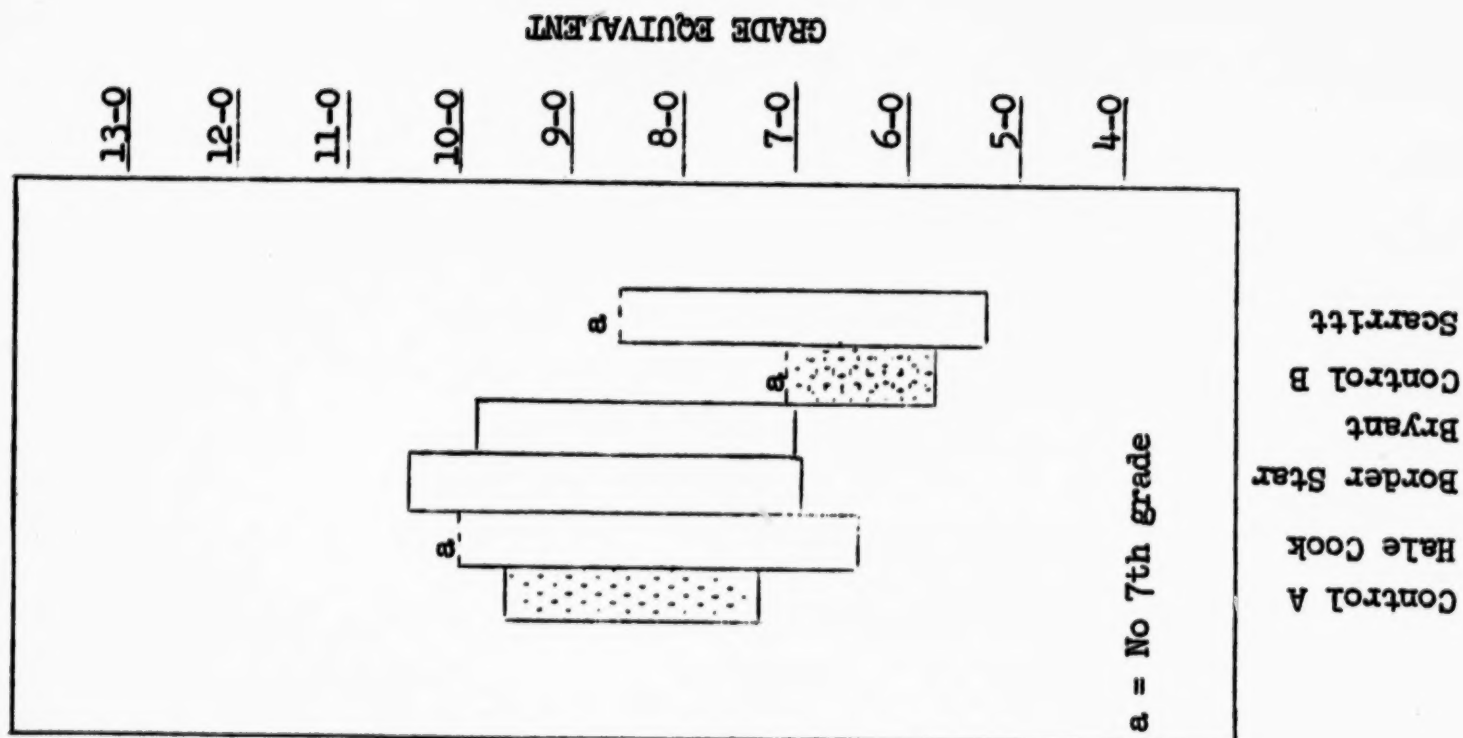


Fig. 4 COMPARISON OF AVERAGE GAIN ON SRA
ACHIEVEMENT SERIES BASED ON COMPOSITE OF ALL
GRADES FOR BOTH YEARS



and were treated statistically with the application of the t-test (2). The five percent level of confidence was the criterion adopted as the basis upon which to determine whether an observed difference was statistically significant. When a difference is determined to be statistically significant, it means that the chances of obtaining a difference that great due to chance fluctuation in score would occur only about five in one hundred times. On this basis it can be said that those differences which have proved to be statistically significant indicate a real difference between the control and experimental groups. The differences which were found to be statistically significant have been marked with an asterisk on Figures 1 through 3.

Examination of Figure 1 shows that in the area of Work-Study Skills the experimental group at Hale Cook, Border Star and Scarritt, achieved significantly greater growth. In Reading, the experimental group at Border Star and Scarritt demonstrated superior achievement. In Language Arts, the experimental group demonstrated significantly greater growth at Border Star and Scarritt. And in Arithmetic, significantly greater growth was demonstrated by the experimental groups over the two-year period at Hale Cook, Border Star and Scarritt. Of the sixteen comparisons thus obtained, ten proved to be statistically significant, and these differences were in favor of the experimental groups. In general, this indicates that the experimental groups had been significantly more successful than the control groups in achieving growth in the areas measured by this test.

For the grade five through grade six group, the experimental group demonstrated significantly greater growth in Work-Study Skills at Scarritt, Border Star and Hale Cook. In Reading, the same three schools also demonstrated significantly greater growth. In the area of the Language Arts, Hale Cook, Border Star and Bryant demonstrated significantly greater growth.

Comparison of Control B and Scarritt shows that, although Scarritt showed greater growth than Control B, the difference was not sufficiently great to be adjudged statistically significant. In the area of Arithmetic, the group at Scarritt, Border Star, and Hale Cook all showed significantly greater growth than their respective controls. Of the sixteen comparisons made for this period, grade five through grade six, twelve were statistically significant, and in each case the direction of difference was in favor of the experimental group.

Those subject areas where statistically significant differences were obtained for the grade six to grade seven group are shown in Figure 3. Here it can be seen that of the eight comparisons made, seven were statistically significant and in favor of the experimental group. The exception is in Arithmetic for Bryant school, where, although Bryant demonstrated greater growth, the difference was not statistically significant.

In summary, it can be seen that of the forty comparisons made between the control and experimental groups, twenty nine were statistically significant, and in each case the direction of difference was in favor of the experimental groups. In no subject area at any level did the control group demonstrate significantly greater growth than the experimental group.

The results of the California Test in Social and Related Sciences are reported in Figures 5, 6, 7, and 8, in the same fashion as for the SRA. The CTSRS samples different areas of achievement than those sampled by the SRA. Part I and Part II of the California Tests in Social and Related Sciences are essentially social studies, based upon knowledge of American Heritage, Peoples of Other Lands and Times, Geography, and Basic Social Processes. Part III of the CTSRS is concerned with Elementary Science, Health and Safety. Thus, when combined with the results of the SRA, the coverage of the subject

Fig. 5 GAIN OVER TWO YEAR PERIOD ON CTSRS FOR CONTROL AND EXPERIMENTAL GROUPS,
GRADES 4 THROUGH 5, BY SUBJECT AREAS

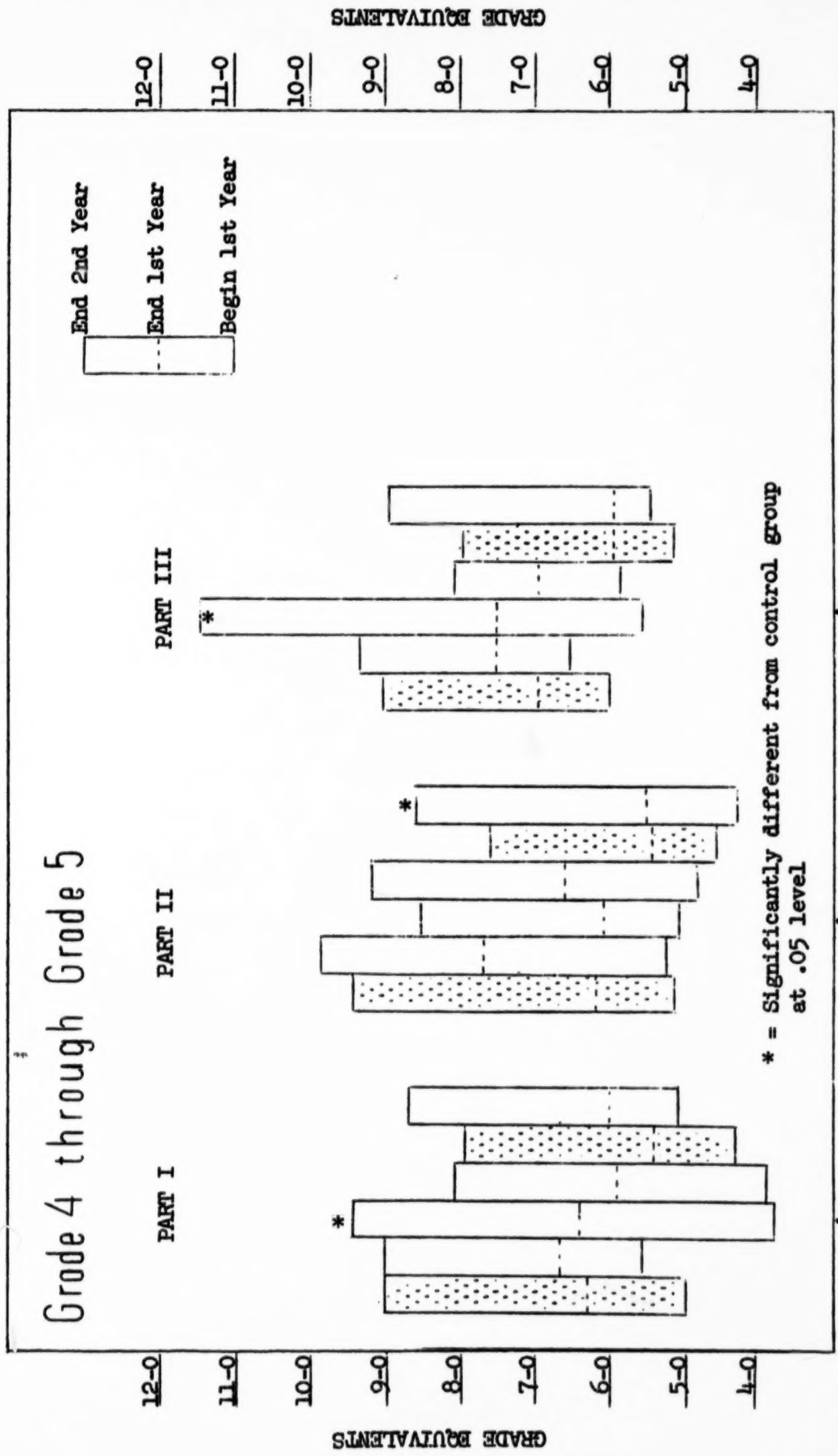


Fig. 6 GAIN OVER TWO YEAR PERIOD ON CTSRS FOR CONTROL AND EXPERIMENTAL GROUPS, GRADES 5 THROUGH 6, BY SUBJECT AREAS

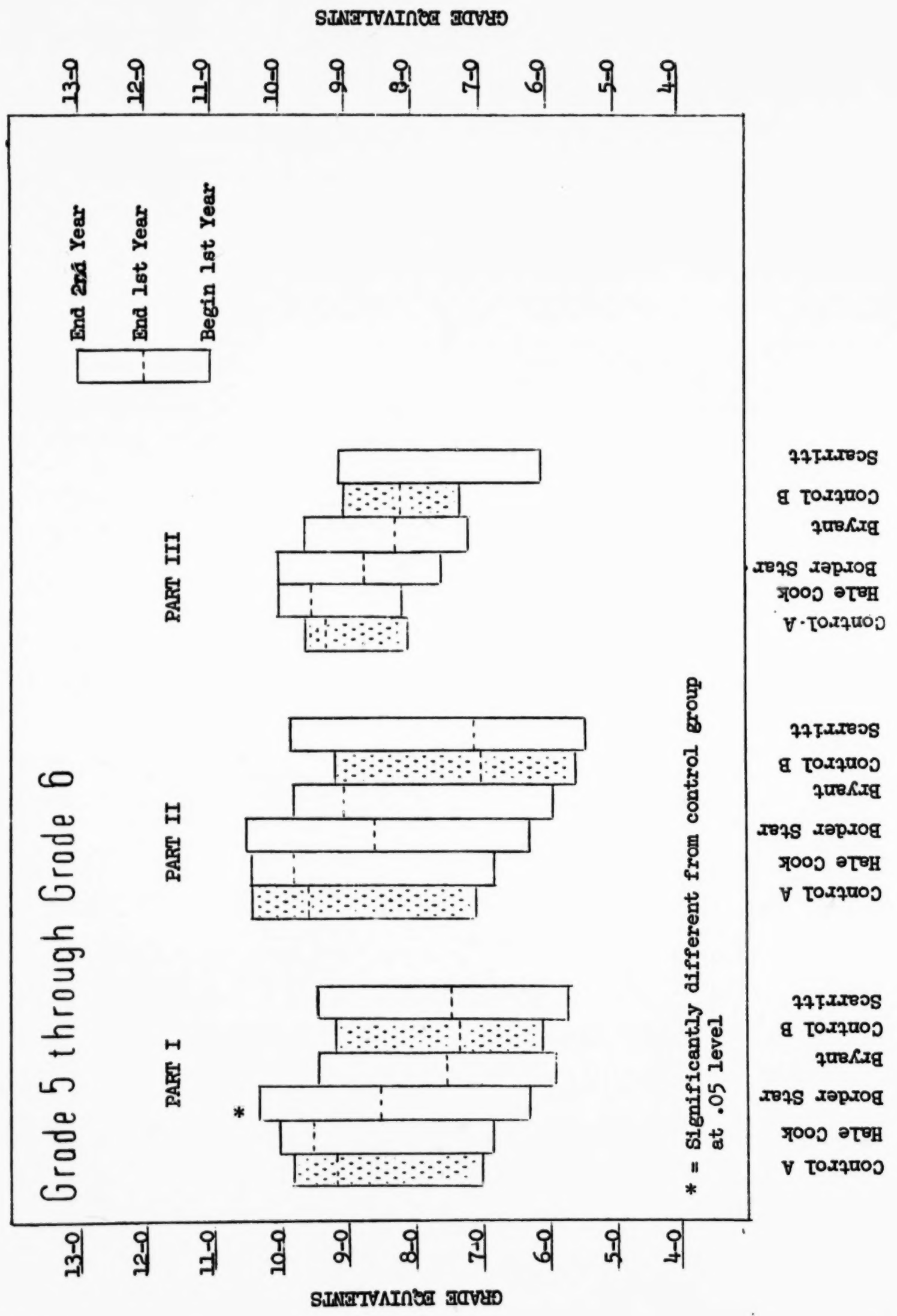


Fig. 7 GAIN OVER TWO YEAR PERIOD ON CTSRS FOR CONTROL AND EXPERIMENTAL GROUPS, GRADES 6 THROUGH 7, BY SUBJECT AREAS

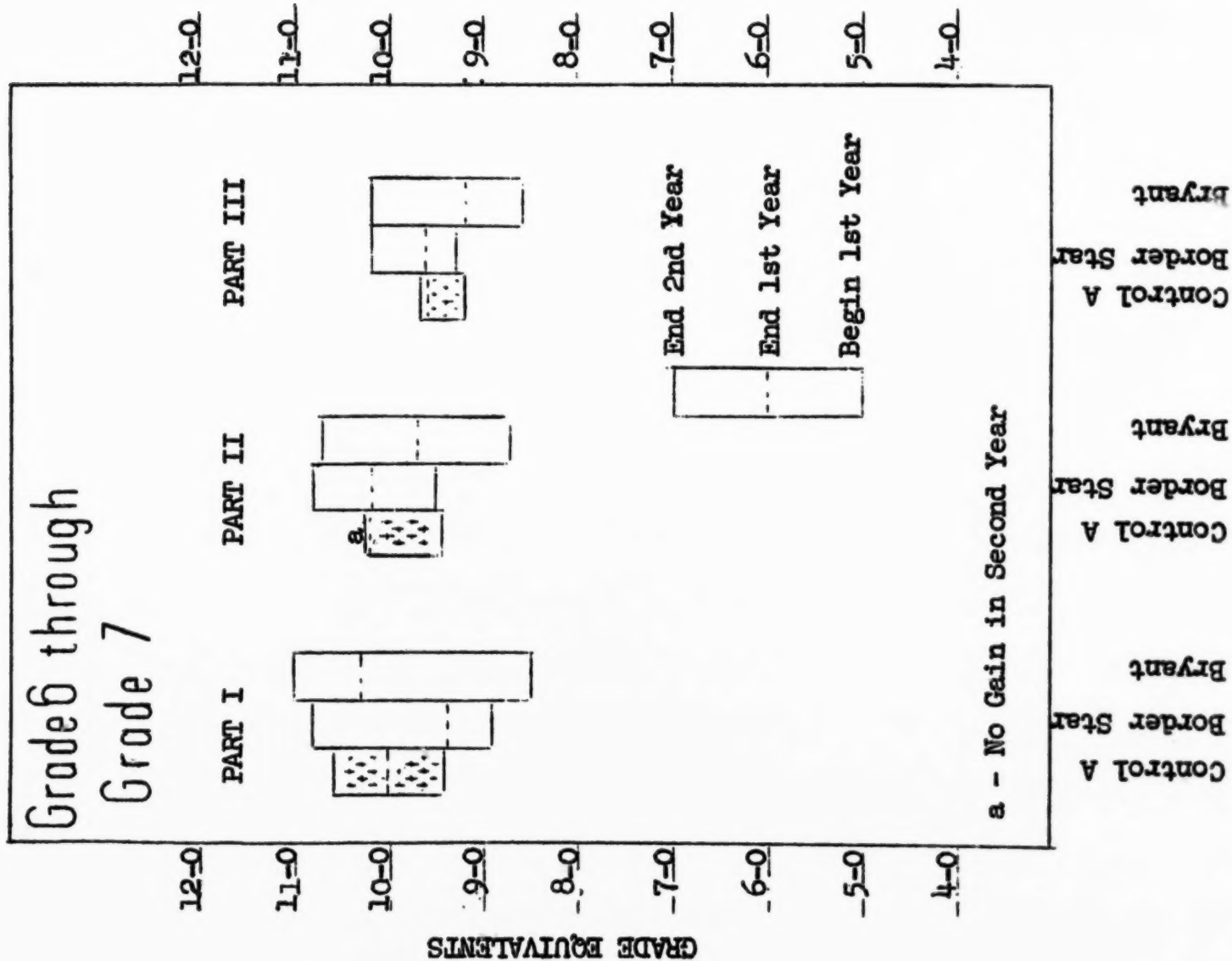
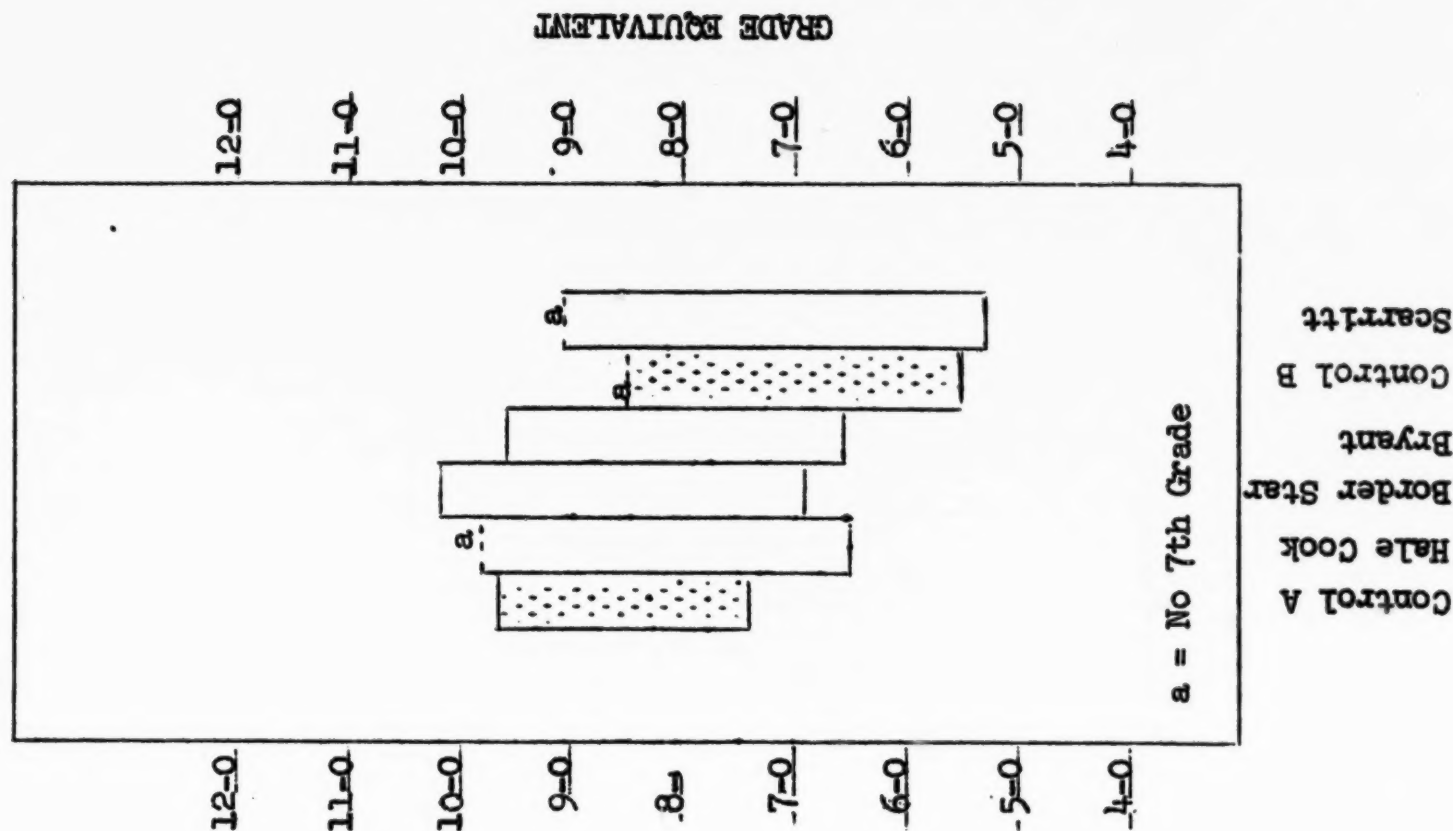


Fig. 8 COMPARISON OF AVERAGE GAIN ON CTSRS BASED ON COMPOSITE OF ALL GRADES FOR BOTH YEARS



areas usually included in the curriculum is more comprehensive.

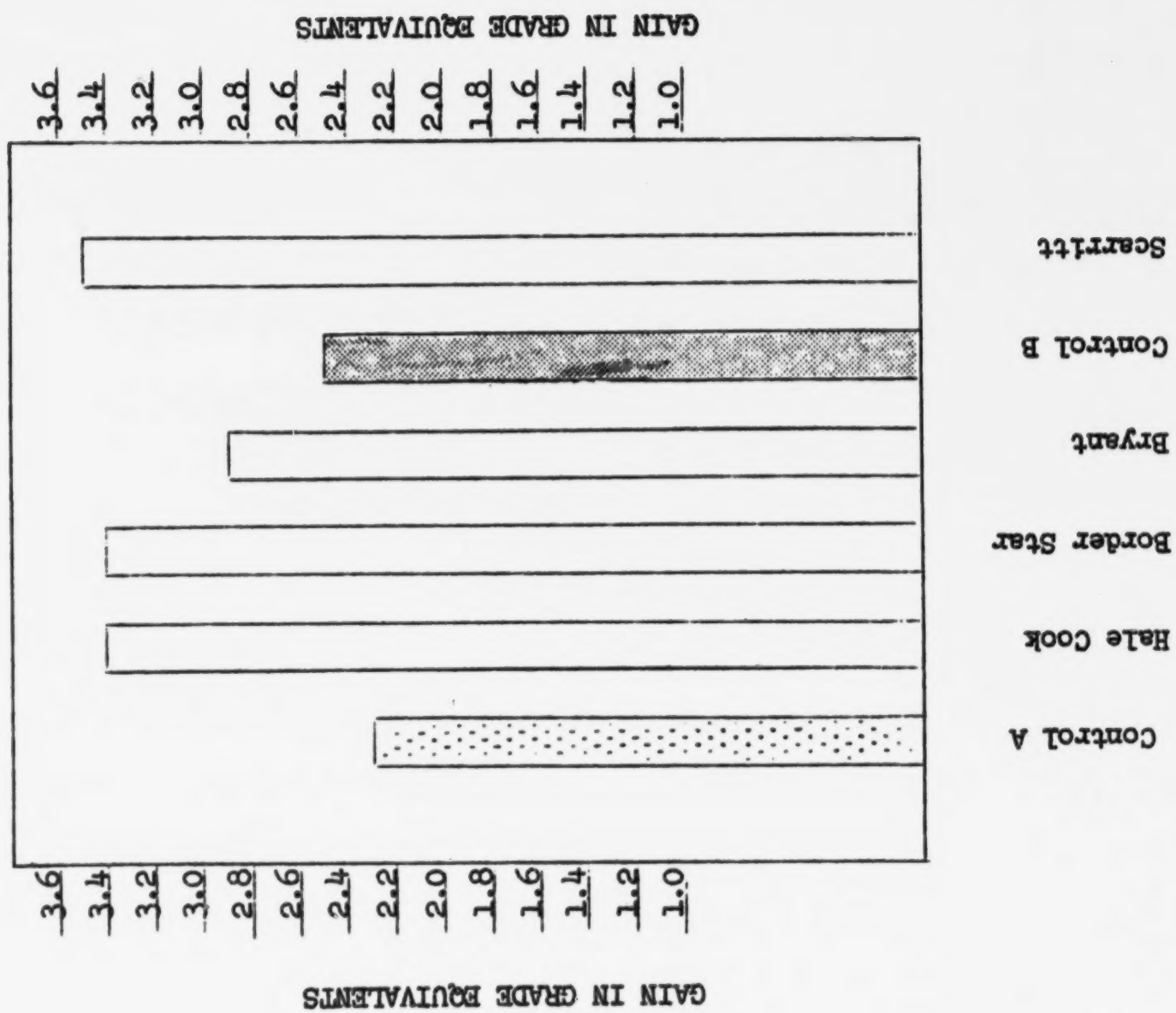
Gains over the two-year period for the grade four through grade five group on all parts of the CTSRS are reported in Figure 5. There it can be seen that the same general trend is apparent in that the gains during the second year tend to be larger than the gains made during the first year of the experiment. This is true also for the control groups. It may also be noted that for this group the range in amount of gain is larger than was observed for the SRA test. Differences between the control and experimental groups were statistically significant for Border Star in Parts I and III, and for Scarritt in Part II.

The figures for the two-year period for the grade five through grade six group are reported on Figure 6. For some schools in some subject areas, the gain during the second year tends to be larger than for the first year, while in other schools and other subject areas, this general pattern tends to be reversed. No sharply identifiable trend appears. The only statistically significant difference observed was for Border Star in Part I.

Gains for the grade six through grade seven group over this two-year period are reported in Figure 7. Here the range of gain is noticeably restricted as compared with the grade five through grade six and grade four through grade five groups. It can be seen in reviewing these three figures that the amount of gain measured decreases substantially each year, and it is quite possible that this represents an approach to the ceiling of this particular test, rather than reflecting actual differences in the amount of gain in these general areas demonstrated by the pupils in the control and experimental groups. No statistically significant differences were obtained.

As with the SRA, the average gain for all parts of the test for all the grades included was calculated and is reported in Figure 8. The com-

Fig. 9 AVERAGE GAIN IN GRADE EQUIVALENTS:
Composite For All Tests and For All Grades



COMPARISON OF SELF-CONTAINED CLASSES AND PART-TIME CLASSES

One of the questions to be investigated in this experiment was concerned with a comparison of measured achievement for self-contained experimental classes and part-time experimental classes. The answer to this question would carry significance when decisions are made as to the organizational structure that would likely be most effective.

One school was organized on the basis of self-contained classes drawn from the pupil population already in attendance at that school, so that no transfers from one school to another or special transportation provisions were necessary. Each section met daily with an all day schedule. Two other schools were organized on a part-time schedule. Here the pupils spent approximately two hours per day in the experimental program during the first year. During the second year the amount of time spent was approximately one-half day once or twice each week, depending on the grade level involved.

The self-contained classes were organized at the Hale Cook school and the part-time classes were established at Border Star and Bryant.

Since the pupils in each of the three schools come from essentially the same type of socio-economic environment, and since they were selected on the basis of measured intelligence, they were comparable and susceptible to valid comparison. Because of the general constellation of characteristics involving socio-economic environment, pre-test scores, and source of experimental sample, pupils in the self-contained classes at Scarritt were not included.

The mean grade equivalents for the self-contained and part-time experimental groups covering the two-year period are depicted in Figures 10 and 11. Figures 10 and 11 show the grade equivalents for the respective groups at the

FIG. 10 GAIN OVER TWO YEAR PERIOD ON SRA ACHIEVEMENT SERIES AND CTSRS FOR SELF-CONTAINED AND PART-TIME EXPERIMENTAL GROUPS, GRADES 4 THROUGH 5

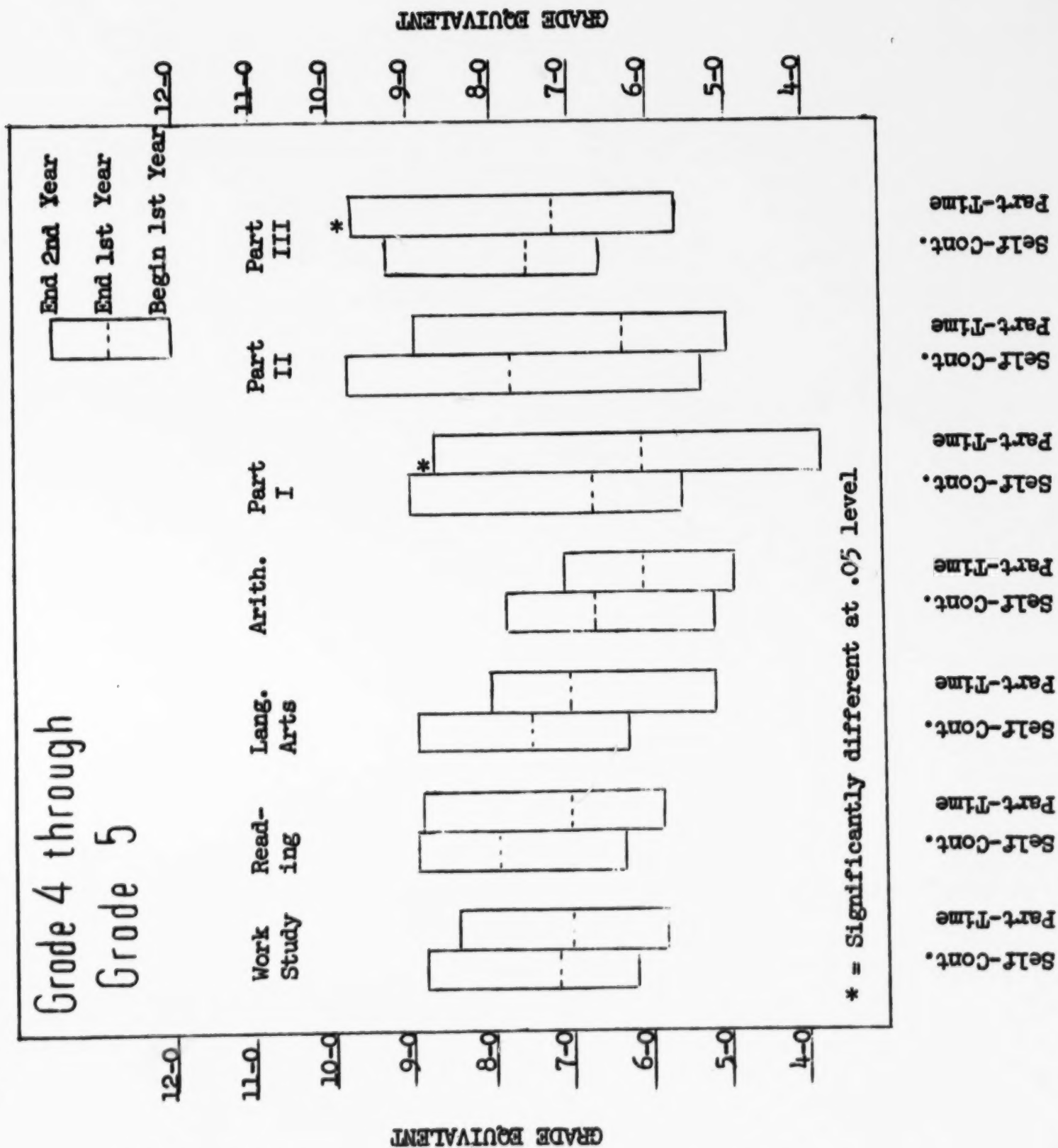
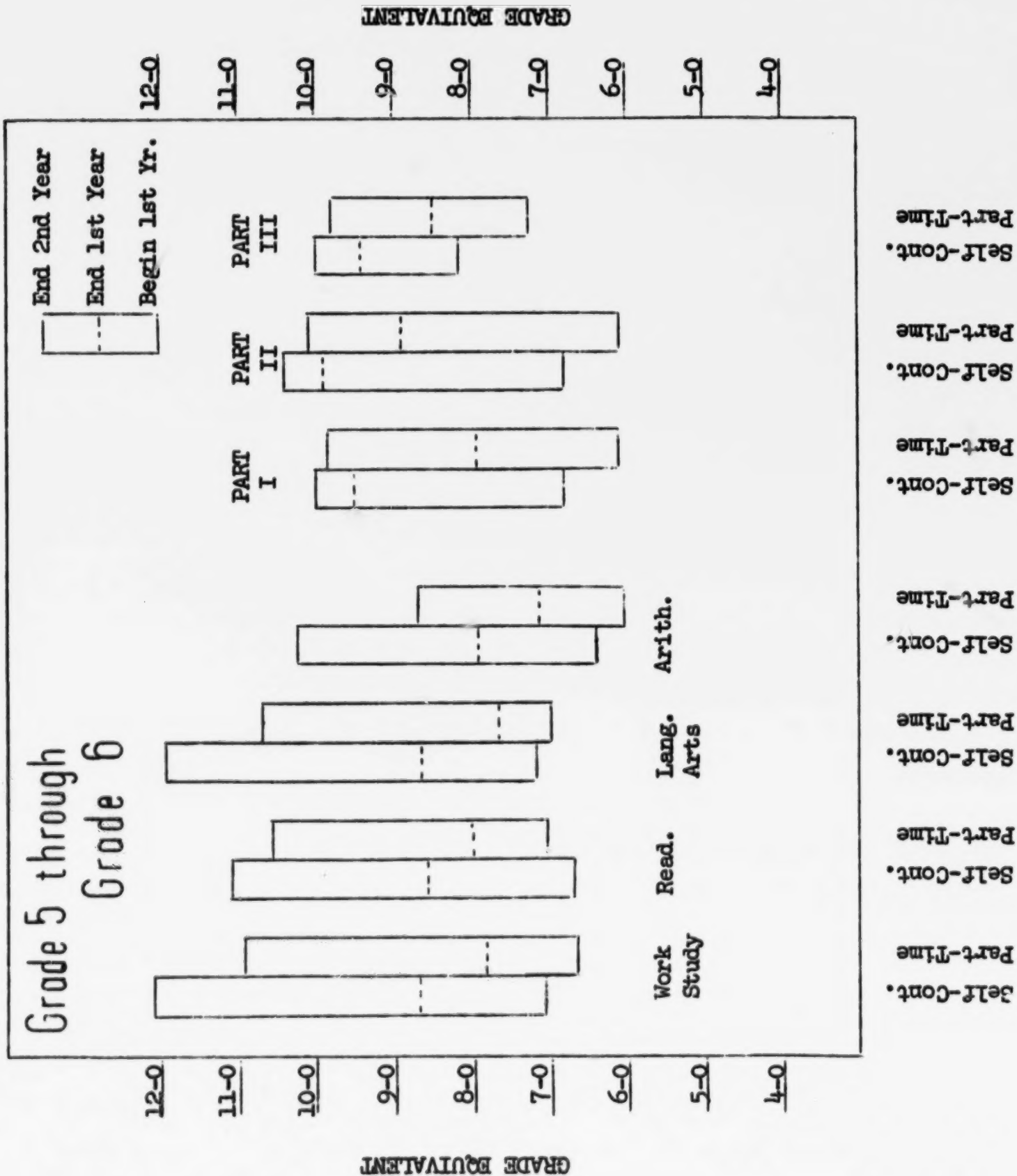


Fig. 11 GAIN OVER TWO YEAR PERIOD ON SRA ACHIEVEMENT SERIES AND CTSRS
FOR SELF-CONTAINED AND PART-TIME EXPERIMENTAL GROUPS, GRADES 5 THROUGH 6,
BY SUBJECT AREAS



beginning of the experimental period, at the end of the first year, and for the end of the second year. Second-year values are shown only for grades 4 and 5 and grades 5 and 6, since the self-contained classes did not extend through grade 7 during the second year.

In general, the analysis of the 14 comparisons between the self-contained and part-time classes shows only two significant differences between the two organizations with respect to measured achievement. The two statistically significant differences were noted for Parts I and III of the CTSRS, at the grade 4 through grade 5 level. Apparently, in terms of over-all gains, the two types of organization were approximately equally effective. Whether or not this would be likely to occur with further experience is unknown, and could not be predicted on the basis of the data given here.

The gains at Scarritt, while not included in the above material, can be studied through a reexamination of Figures 1 through 9. And it has been noted previously that the amount of gain demonstrated by the pupils at Scarritt exceeded all other schools involved, indicating that that type of organization was effective. Reference to Figure 9 may help in evaluating the over-all gains for both types of organization.

PEER RELATIONSHIPS

Among the many criticisms of programs for academically talented pupils are those that concern the effect of such plans on the relationships between pupils in such a program and those pupils not in the program. It has often been charged that special programs for academically talented pupils lead to the creation of an intellectually elite segment,

which operates virtually outside the realm of the large part of the pupil population in both intellectual and social functions. Presumably, such a condition would incorporate elements of mutual rejection across a theoretical boundary between academically talented and non-academically talented, with the consequent fractionalization of the student body imposing deleterious effects upon both segments.

In an effort to explore this aspect of the experimental program with academically talented pupils, a plan to obtain sociometric data was developed. Pupils in both experimental and control groups responded to each of three sociometric questions. The three questions used were:

Question A: With what three people in your class would you most like to study?

Question B: With what three people in your class would you most like to play on the playground?

Question C: With what three people in your class would you most like to go to a party?

Each pupil indicated his first, second, and third choices. Lists of the pupils in the room were prepared for the pupils to mark. Written introductory remarks and instructions for test administration were employed to provide standardization in administering the tests. Pupils had sufficient opportunity to become acquainted with one another before the data were collected in the fall. Actually, most of these pupils had been together in previous school experiences, so that relatively few new acquaintances needed to be made. The same criteria and procedures were employed in the spring testing.

Sociometric results are reported here for Control A and the pupils in the experimental classes at Border Star and Bryant, since the classes at Hale Cook and Scarritt contained only academically talented pupils. The fourth and sixth grade sections at Border Star could not be used be-

cause of the organization. Pupils in the fourth grade academically talented section were combined with fifth grade academically talented pupils to make a four-five combination. This was also true for the sixth grade pupils, where a six-seven combination was used. The result was that the fourth and sixth grade pupils were in classes containing only academically talented pupils.

After the data were collected, the academically talented pupils were identified and the mean number of choices received by academically talented pupils was computed and compared with the mean number of choices received for the room as a whole. These comparisons are shown in Tables V, VI, and VII.

The direction of the difference between mean number of choices for academically talented and total pupils, and the changes in the magnitude of these differences between fall and spring are the basic considerations used in this sociometric analysis.

When three choices per pupil are allowed on a single sociometric criterion, the average number of choices would be three. Gronlund (3) described a fixed frame of reference developed by Bronfenbrenner to describe the statistical significance of the number of choices for each pupil. Based upon a single sociometric criterion with three choices per pupil, the .02 and .03 levels of significance would require seven choices in order to be significantly different from the expected value.

Inspection of Table V, which reports the results for Control A, Border Star and Bryant pupils on Question A, "With what three people in your class would you most like to study?", shows that at no time were the mean number of choices significantly different from that which would have been expected. This indicates that neither the control nor the experimental groups varied significantly from the criterion of mean number of

TABLE V

SUMMARY OF MEAN NUMBER OF TIMES CHOSEN FOR TOTAL AND ACADEMICALLY TALENTED
CONTROL AND EXPERIMENTAL GROUPS, FALL AND SPRING, QUESTION A

Grade	Sex	S-F	Control A			Bryant			Border Star		
			AT	Tot	D	AT	Tot	D	AT	Tot	D
4	B	S	3.7	2.9	.8	4.2	3.0	1.2			*
	B	F	2.7	2.8	-.1	4.2	3.0	1.2			
4	G	S	3.7	2.8	.9	2.8	2.7	.1			
	G	F	3.9	2.8	1.1	2.9	2.5	.4			
5	B	S	4.9	2.9	2.0	3.7	2.9	.8	2.5	2.5	.0
	B	F	4.6	3.1	1.5	3.0	2.7	.3	3.3	2.7	.6
5	G	S	3.4	2.9	.5	3.4	2.7	.7	3.5	2.8	.7
	G	F	3.1	3.3	-.2	3.5	3.0	.5	3.3	2.6	.7
6	B	S	5.5	2.9	2.6	3.3	2.7	.6			*
	B	F	5.0	2.7	2.3	3.7	2.9	.8			
6	G	S	4.7	3.2	1.5	3.0	2.6	.4			
	G	F	3.6	3.4	.2	4.1	3.0	1.1			
7	B	S	4.1	2.8	1.3	3.0	2.7	.3	5.2	2.8	2.4
	B	F	3.6	2.7	.9	4.0	2.7	1.3	4.5	2.5	2.0
7	G	S	4.3	3.2	1.1	5.4	2.9	2.5	3.7	2.8	.9
	G	F	3.8	2.9	.9	5.0	3.3	1.7	4.0	3.0	1.0
Mean	B	S			1.675			.725			1.200
Differ-	B	F			1.150			.900			1.300
ence	G	S			1.000			.925			.800
Spring-	G	F			.500			.925			.850
Fall	B&G	S			1.338			.825			1.000
	B&G	F			.825			.913			1.075

* See text for explanation of these blank spaces.

choices for total pupils.

It is possible from Table V to see the changes in mean number of choices that occurred between ratings taken in the fall and in the spring for both boys and girls. For Control A, all of the comparisons in the spring were in favor of the academically talented pupils. These are the pupils who had no special treatment other than that provided in the regular classroom. In the fall there were two points where the mean scores for total pupils were higher than the mean choices for the academically talented. This occurred for boys at grade four and for girls at grade five. Both times the magnitude of the differences was quite small. At both Border Star and Bryant the mean number of choices for both fall and spring and boys and girls was in favor of the academically talented pupils, with the exception of grade five boys in the spring at Border Star where the difference between the academically talented and total pupils was zero. The pupils at Border Star and Bryant in the academically talented groups were all pupils who had received the special program as described earlier.

Question B was concerned with the three people in the class chosen to play with on the playground. The sociometric results for this question are reported in Table VI. As with Question A, there were no mean number of choices for any group at any level which indicated statistically significant differences between academically talented and total group pupils. For Control A the academically talented pupils received consistently a mean number of choices greater than for the total group pupils, except for fifth grade girls and sixth grade boys where the mean choices for total pupils exceeded the mean choices for the academically talented for both fall and spring. The seventh grade girls showed a reversal of

TABLE VI

SUMMARY OF MEAN NUMBER OF TIMES CHOSEN FOR TOTAL AND ACADEMICALLY TALENTED
CONTROL AND EXPERIMENTAL GROUPS, FALL AND SPRING, QUESTION B

Grade	Sex	S-F	Control A			Bryant			Border Star		
			AT	Tot	D	AT	Tot	D	AT	Tot	D
4	B	S	3.7	3.3	.4	3.2	2.8	.4			*
	B	F	3.1	2.9	.2	2.4	2.8	-.4			
4	G	S	3.2	2.3	.9	2.8	2.9	-.1			
	G	F	3.2	2.8	.4	3.2	2.6	.6			
5	B	S	3.3	3.0	.3	2.2	3.1	-.9	1.0	2.5	-1.5
	B	F	3.6	3.1	.5	1.8	2.9	-1.1	1.3	2.7	-1.4
5	G	S	2.6	2.7	-.1	1.8	2.5	-.7	2.5	2.7	-.2
	G	F	2.6	2.8	-.2	2.8	2.7	.1	2.3	2.6	-.3
6	B	S	2.0	2.3	-.3	1.8	2.8	-1.0			*
	B	F	2.2	2.9	-.7	2.4	2.9	-.5			
6	G	S	3.4	2.8	.6	2.8	2.6	.2			
	G	F	2.9	2.7	.2	2.7	3.0	-.3			
7	B	S	2.8	2.8	.0	2.5	2.9	-.4	2.9	2.8	1.0
	B	F	3.4	2.9	.5	2.8	3.1	-.3	2.0	3.3	-1.3
7	G	S	2.9	2.8	.1	3.5	2.6	.9	1.4	2.7	-1.3
	G	F	2.6	2.9	-.3	2.6	2.9	-.3	2.7	2.4	.3
Mean	B	S		.333				-.475			-.250
Differ-	B	F		.475				-.575			1.350
ence	G	S		.375				.075			-.750
Spring-	G	F		.025				.025			.000
Fall	B&G	S		.354				-.200			-.500
	B&G	F		.250				-.275			-.675

* See text for explanation of these blank spaces.

direction of difference between fall and spring with the spring score being in favor of the academically talented pupils. For Bryant, more of the differences were in favor of the total group. In three cases the direction of difference was reversed from the fall scores in favor of the total group to spring scores in favor of the academically talented. In two situations the reversal was in the other direction. Of the five situations in which reversal of direction of change occurred, four were for the girls only. The only reversal of direction among the boys was at the fourth grade level. This apparently indicates greater change in social structure among the girls than among the boys at Bryant. At Border Star the academically talented pupils tended to receive fewer choices than the total pupils for both fall and spring in grade five. At grade seven the direction of difference was reversed for the boys with the spring score being in favor of the academically talented. The seventh grade girls at Border Star also reversed the direction of difference in terms of mean number of choices but here the direction of difference was reversed to be in favor of the total group. Apparently there was very little change in social structure in grade five at Border Star over the course of the year whereas in grade seven there was some fluctuation. It should be emphasized again that in no case, either control or experimental, were the differences obtained found to be statistically significant.

The sociometric results for Question C, "With what three people in your class would you most like to go to a party?", are reported in Table VII. In purely social situations intellectual status has been presumed to be no more significant than other factors as a basis for choosing the company of other persons. Perhaps intellectual status may be less important than residential proximity, location of party, and similar fac-

TABLE VII

SUMMARY OF MEAN NUMBER OF TIMES CHOSEN FOR TOTAL AND ACADEMICALLY TALENTED
CONTROL AND EXPERIMENTAL GROUPS, FALL AND SPRING, QUESTION C

Grade	Sex	S-F	Control A			Bryant			Border Star		
			AT	Tot	D	AT	Tot	D	AT	Tot	D
4	B	S	2.6	3.0	.4	2.6	2.9	-.3			*
	B	F	2.0	2.5	-.5	3.3	2.6	.7			
4	G	S	3.7	2.9	.8	2.8	2.9	-.1			
	G	F	3.8	3.1	.7	3.4	2.9	.5			
5	B	S	3.8	2.9	.9	2.7	3.0	-.3	1.3	2.7	-1.4
	B	F	4.2	3.1	1.1	2.4	2.8	-.4	2.0	2.6	-.6
5	G	S	2.6	2.8	-.2	2.3	2.6	-.4	1.8	2.5	-.7
	G	F	3.4	2.6	.8	3.1	2.8	.3	2.3	2.3	.0
6	B	S	3.0	2.2	.8	2.6	2.8	-.2			*
	B	F	2.9	2.4	.5	2.9	2.9	.0			
6	G	S	3.8	3.2	.6	2.5	2.5	.0			
	G	F	3.9	3.1	.8	3.2	3.2	.0			
7	B	S	2.7	3.2	-.5	3.2	2.5	.7	4.7	3.3	1.4
	B	F	3.2	2.4	.8	2.8	3.0	-.2	1.5	2.7	-1.2
7	G	S	3.3	3.1	.2	3.5	3.1	.4	.6	2.4	-1.8
	G	F	2.0	3.0	-1.0	2.3	2.6	-.3	1.7	2.8	-1.1
Mean	B	S			.200			-.025			.000
Differ-	B	F			.475			.033			.900
ence	G	S			.350			.000			-1.250
Spring -	G	F			.325			.166			-1.100
Fall	B&G	S			.275			.013			-.625
	B&G	F			.400			.999			-1.000

* See text for explanation of these blank spaces.

TABLE VIII

NUMBER OF ACADEMICALLY TALENTED AND TOTAL PUPILS FOR
CONTROL AND EXPERIMENTAL GROUPS--FALL AND SPRING

Grade	Sex	S-F	Control A		Bryant		Border Star	
			AT	Tot	AT	Tot	AT	Tot
4	B	S	12	55	10	32	*	
	B	F	12	50	11	34		
4	G	S	13	51	9	36		
	G	F	17	50	9	36		
5	B	S	18	47	10	48	4	18
	B	F	18	46	10	48	4	18
5	G	S	18	54	14	40	6	21
	G	F	19	53	14	40	6	21
6	B	S	17	61	13	38	*	
	B	F	17	61	13	34		
6	G	S	25	76	15	33		
	G	F	26	78	16	34		
7	B	S	25	57	13	36	5	30
	B	F	25	57	14	36	5	31
	G	S	18	64	10	35	8	39
7	G	F	18	64	10	36	8	40
Total	B&G	S	146	465	94	298	23	108
	B&G	F	152	459	97	298	23	110

* See text for explanation of these blank spaces.

tors. Therefore, we would expect approximately equal distribution of differences between academically talented and total group values. For Control A, 11 of 16 differences were in favor of the academically talented pupils. At Bryant eight of 16 differences were in favor of the total group pupils with five differences in favor of the academically talented and in three cases the differences were equal to zero. At Border Star, with the exception of two situations, the differences were in favor of the total group pupils. These figures indicate that in general the academically talented pupils in Control A were more often chosen in social situations than were the academically talented pupils at Border Star and Bryant.

Since the number of pupils was not given in the tables reporting results of the sociometric data described above, Table VIII is included here. Table VIII shows the number of academically talented pupils and the total number of pupils in Control A, Border Star and Bryant groups by grade level and sex. The table would be read as follows: For grade 4 boys in Control A, 12 of 55 pupils in the spring were academically talented. At Bryant, 10 of the 32 fourth grade boys in the spring were academically talented.

OPINIONS

Pupil Opinions. In an attempt to ascertain the effects of special grouping upon the pupils who participated in the various programs for the academically talented established at the four schools, questionnaires were devised to receive pupil comment concerning several aspects of the program. In the questionnaires of both years, the participating pupils were invited to respond to these questions: 1. What do you like about the program - what values did you receive? 2. What do you not like about the program? 3. What suggestions do you have for improvement of these classes? Because

the majority of the children in one school maintaining full-time classes for the academically talented were pupils who were transferred from their own school to a new one, and thus had many social as well as academic adjustments to make, four additional questions were asked of them the first year: 4. Were there any changes in your neighborhood relations? 5. Did you make many new friends? 6. Did you have more or fewer activities in this class? 7. If you were a bus rider, did you enjoy this experience?

A review of comment received from the two years' study reveals a picture of general satisfaction with the program. Negative comment, never great, was decidedly lessened the second year; positive comments were strong, and, in the second year, showed a greater awareness of the values of the program to the pupil as a person as well as a student. Suggestions for improvement followed the same development, with an increased expression of desire for more study and more time.

Responses to the first question concerning the pupil's appreciation of the program was the first year dominated by reference to the teacher or to a special study - responses very similar to those that might be elicited from any class asked similar questions. There was however a sprinkling of appreciative comment concerning teaching techniques, improved study methods, and "learning more." Values listed by the pupils after the second year of the experimental classes exhibited a far greater degree of sophistication. Rather than a listing of certain subjects studied or projects accomplished, there were recurring majority statements concerning the values of the classes to the pupils as individuals and as students. The development of independent work habits, the improved ability to get along with others, an increased feeling of self-direction and self-responsibility, greater confidence in the area of oral and written communications, and an awareness of and interest in

an expanded world of learning were included. Since the great majority of the children responding to this second year's questionnaire were enrolled in the classes the previous year, these comments of appreciation represent a two years' experience in the classes.

The second question, concerning their dislikes about the program, elicited for the first year a scattering of remarks concerning certain subjects not liked by the child, but were concerned primarily with time allotments - "too little time" - or space shortage; other responses varied from school to school and reflected the particular class organization. Some reference was made to the "Tests", which were a part of the testing design of the experimental program. Individual remarks from this first year exhibited some sensitivity to the separation from friends in the regular classrooms, though there was no majority negative reaction to this separation. The question concerning pupil dislikes of the program the second year was incorporated into that concerning improvements that might be suggested for the classes. Examination of these responses reveals a recurrence of the plaint for "more time" emanating from the classes on a part-time schedule.

Suggestions for program changes were greatly similar for both years. Pupils wanted more intensive study and more fields of study. For the first year only a few children offered suggestions other than the addition of more subject content. Study of the second year's listing of suggestions offers a view of an increasing interest in the improvement of the program through not only an addition to the depth and extent of study, but also through better use of school and community resources and possible program or organizational changes. Pupils in the two schools operating a part-time scheduling offered more suggestions for program or organizational changes than did those

participating on the self-contained basis. The school maintaining a full-time schedule and serving a more favored socio-economic community originated more requests for more intensive and extensive study than did any of the other three schools participating in the program. The school offering the fewest suggestions of any kind, and throughout the survey giving most approval to the experimental program, was that serving the least-favored community of the four represented; the most frequent suggestion from this school was that more schools should be participating in such a program.

Majority reports from the various schools on suggestions for change was on a "more" basis: more time, more studies, more research, and, in the case of the part-time classes, more definite program, and more cooperation between regular and special class.

Since the remainder of the seven questions involved only one school and were asked only at the close of the first year, only brief mention will be made of them. In response to the question concerning changes in neighborhood relations, 34 children said there was a change, 35 said there was not. Few children identified the type of change, but examination of parents' responses, discussed later in this report, gives indication of a seeking out of older playmates and a lessening of regular contact with the neighborhood children because of late bus hours. Due to necessary bus scheduling, these classes were on a 9 to 4 school hour schedule; many then rode the bus for from 30 minutes to an hour. In answering the question concerning the making of many new friends, only one child stated that he had not. Each class responded by a large majority that it had had more activities in this year's program than heretofore experienced, but only in the fourth grade did the majority of the class agree that they had enjoyed the bus transportation. On the whole, responses to these questions indicated a good adjust-

ment to the new school environment.

Conclusions to be drawn from the responses of two years from the children are several. With few exceptions, the pupils participating in the program avowed their liking for, and appreciation of, the experimental classes and the program offered. While each year's responses to the questions asked showed similarities in the reactions of the pupils, the remarks proffered at the close of the second year evidenced a refinement of thought concerning the values of the program and a greater alertness to the possibilities for self-improvement offered. An increased desire to learn was indicated, and appreciation was expressed for the opportunities for learning given by the class.

The chief objection to the program was lack of time. Though this comment came primarily from those classes on part-time scheduling, it was indirectly present in the remarks that requested more depth and greater extensions of study. Though not in majority opinion, there was the first year reflected by pupils in part-time classes an uneasiness concerning the change of attitude of teacher and peers toward them; the second year of the program apparently allayed much of the concern, for there was only an occasional comment that indicated such a feeling. Of interest, is the marked reversal of position with respect to this attitude of the two schools with part-time classes; the school that at the end of the first year showed the greatest amount of unease concerning peer relationship now evidenced practically none.

Positive comment on the classes, their organization, and their programs, was in high majority from all schools participating.

Parent Comments. Written comments on a questionnaire form were solicited from the parents only at the close of the first year of the program. During

the second year, parents responded through replies on the report forms sent home and through frequent conferences with the teachers. Because there was no one set of questions given to the parents concerning their responses to the second year's program, there can be no direct comparative summary given of the two years' responses. A fair statement may be made, however, that according to responses given to the schools, the percentage of approving comments concerning the program and its effects upon the child was very high.

Evaluation forms for the first year carried these questions: 1. Did this experience (in the program) affect your child's attitude toward school? If so, how? 2. Did the program affect your child's attitude at home? If so, how? 3. Was there a change in your child's neighborhood relationships? If so, how?

Parents offering comment in regard to the first question - that of the attitude of the child toward school - gave approving comment concerning the evidence given by the child of greater interest in his school work and in learning, better utilization of time, and stimulation toward higher standards of achievement. Stratification of comment according to grade level of the child, however, reveals an interesting progression of the increase of negative comment from 100 percent approval from parents of fourth grade level to the origination of the greatest number of negative comments from parents of seventh grade children. Here the negative responses showed the parents' alertness to the several children's reluctance to be set apart as different from their peers. Comments received from parents during the second year of the program indicate a decided lessening of such feeling.

Responses to the second question indicated that the parents did see changes in the children's attitudes toward home, and that these changes were

in the realm of increased interest in learning, development of self-responsibility and self-direction, and an increase in cooperation and attention given to family activities. There were some negative changes seen by some parents, chiefly in a slighting of family responsibilities; other negative comments were individual.

By far the great majority of parents indicated in their response concerning effects of the grouping on neighborhood relationships that they could see no change. Most of those who did admit to a change noted indicated approval of the change: "more and better friends," "better relations with all children, less domineering." Several parents whose children were transported by bus did note a loss of contact with neighborhood friends; only four of the over 200 replies mentioned a "coolness" of friends toward the participant. Indication from frequent parental contact during the second year would reaffirm the lack of negative change in neighborhood relationships.

Conclusion then may be drawn of general parental acceptance of the program as indicated by the great majority of approving remarks given by parents in response to questions of evaluation of the programs effect upon the children. While the second year's evaluation of the program in this regard was not in formal design, parents' responses on report forms and by letter indicates a continuation of approval and an increasing appreciation of the stimulation toward learning and self-direction given the child through the program's experiences. Negative comments lessened considerably in frequency during the second year of the experiment.

Teachers of Experimental Classes. At the close of both years of the experimental program, teachers of the experimental classes were asked to give their opinions of the successes and weaknesses of the program and the organization of classes. Their comments were directed to the answering of four questions:

1. What were the major values of the program for the pupils? for you?
2. What were the major disadvantages for the pupils? for you?
3. What effect, if any, did the program have upon the social and personal relationships within the school: for the pupils? for you?
4. In what ways might the program be improved?

Reactions of teachers for both years was one of general approval of the program in its effects both upon the children and upon themselves. Greatest point of acclamation was the stimulating effect of the experience toward better teaching on their part and greater interest in learning on the part of the children.

A review of responses given at the close of each of the two years of the program indicates a growing appreciation of the values of the program in reference to its ultimate goals. As in the second year's responses of the children, teachers' comments on the second year's experience showed a deeper insight into the worth of the program to the pupils in reference to the development of extended skills of learning, of intrinsic motivation toward higher goals of learning, and of greater quest for knowledge. Teachers are enthusiastic about the constant reaching for new information, and about the increasingly skillful way in which this new knowledge is handled in charting the way to new goals.

Comments of the second year praise strongly also the increased skill shown by the pupils in oral and written communication. This area of study was a prime feature during the second year's program; results achieved by the pupils were apparently gratifying to the teachers. Comments from both years stress the increasing independence of study and self-direction shown by the pupils.

According to teacher response, values of the program to themselves were

considerable. In both years teachers expressed a deep appreciation for the learning abilities of their students, and a greater awareness of the potential of these children of high mental ability. The challenges given by the children were quoted by the teachers as requiring them to reevaluate their teaching techniques and their subject matter materials; "different and better" teaching was now required.

Disadvantages or problems encountered during the two year's program were very similar in both year's accountings. Lack of time and lack of space were the major objections. These two disadvantages were recorded most frequently by the teachers as hindrances to both pupil and themselves. The second year's remarks did see the addition by teachers of part-time classes of problems noted both for pupils and teachers: for the pupils, necessary adjustments to assignments and to teacher attitudes toward the special classes and their participants; for the teacher, working with the four grade levels and with so many children (on a weekly basis).

In response to the third question - that concerning the effect of the program on social and personal relationships with the school - teachers' estimation of the effects upon the pupil were scant in number at the close of the first year, this in spite of some few vigorous and negative remarks of the children and parents who experienced the part-time program organization. On the whole, however, it was felt that the scarcity of remark indicated the general approval given the classes. At the close of the second year, teachers of part-time classes made note of the effect of the attitude of the regular classroom teacher toward the classes and their participants upon the pupils enrolled in such classes; the respondents also noted some difficulty on the part of a few children to "keep up" with studies in both class situations. Despite this, however, indication was given of improved relationships

within one school.

For both years, teachers of experimental classes saw little or no change in their own relationships with the faculties of their respective schools. A few teachers did admit to sensing a slight change in attitude toward them during the first year of the program, but reported very little change during the second. There were at times some temporary irritations over scheduling in regard to the part-time classes, or over selection of pupils for the program, but these were few in number. On the whole, participation in the experimental program appeared to have very little effect upon peer relationships with the building.

The final question asked of the teachers concerned suggestions for improvement of the program. One answer came from both year's responses: better screening of pupils. Second year comment in this regard requested the use of a higher IQ base, plus the giving of more attention to achievement level and desire for learning.

Emanating from all remarks garnered from teachers of experimental classes was a feeling of an awareness of, and an appreciation for, the values of the program to the pupils and to themselves. Almost wholehearted approval was given, but concern was felt over the objective tribulations of too little time and space and over the subjective problem of teacher-pupil relationship in schools maintaining special class organization on a part-time basis.

Teachers of Regular Classes. Comments proffered by teachers of regular classes concerning the values and/or organization of the experimental program as established in the school in which she was teaching, gave indication of widely varying degrees of acceptance of the program. Responses offered from the first year's experience were so incomplete as to negate the possibility of presenting a true basis of opinion from that year. Therefore,

the summary presented here is in actuality a summary only of second year comments.

Comparison of remarks offered by teachers in response to questions suggested for answering brings quickly to view the easier and greater acceptance of the phase of the programs maintaining self-contained classrooms. Teachers were requested to respond to four questions: 1. Do you feel the program helped or facilitated your regular classwork? How? 2. Do you feel the program impaired your regular class work? How? 3. What effect, if any, do you feel the special program had upon the social development or adjustment of the pupils in your room? 4. What other comments do you have about the program?

Responses from the teachers were numerous, with greatest number of comments originating from teachers in the schools maintaining part-time classes. As has been stated, the one responding school maintaining self-contained classroom offered few remarks; those that did come were positive in their tone, and mentioned the raising of standards for all pupils, the sharing of ideas and techniques with the teacher of the special class, and the development of hitherto dormant leadership qualities in some of the children of the regular classroom; no impairment of regular classwork was noted, nor was there any apparent difference of feeling among the children toward those in special class.

Teachers of schools maintaining part-time classes, however, offered many suggestions and criticisms, both positive and negative. Opinion was divided as to the values of the program as organized in these particular schools. Comparison of remarks from the two schools involved shows one school issuing a greater acceptance of the program than the other. Though this school did not present a picture of total approval, it did accede

greater values to the program in its effects upon the pupils than did its counterpart in the experiment. This school reported greater evidence of "carry-over" into the regular classroom of special class skills and learnings than did the other, and also indicated a better social adjustment of the pupils. This is in agreement with pupil and parent reports from the first and second years of the program in this school. Teachers from both schools agreed upon difficulties in scheduling daily and weekly programs because of the movement of some of the children to special class for part of the day.

Responses given in response to the invitation to comment at will upon the program were of diverse nature, and were a reflection and often a summary of the particular teacher's earlier remarks. Fair comment was given in accordance with the teacher's experience with and belief in the program. Compliments concerning the benefits of the program to the children were given; negative criticism on criteria for selection were given. Most remarks came as responses from one or two teachers, but three comments were offered from five to eight respondents: 1. Request for smaller classes so that adequate enrichment for high ability pupils may be provided in regular classrooms. 2. Suggestion that self-contained classes be established for these pupils. 3. Recognition of the benefits brought to the regular classroom from special class activities.

Principals' Opinions. At the close of the first year of the program, principals of participating schools were asked to evaluate the experience in four frames of reference:

1. Value of the programs for pupils in the special classes, for those not in the special classes, for the regular classroom teacher, as a stimulus to the general school program.
2. Disadvantages of the program.
3. Special problems in organizing and administering.

4. Parental reaction to the program, both from parents of the participating children and those not participating.

Because no such written evaluation was requested the second year, the following points represent a summary of remarks pertaining only to the first year of the program.

In the estimation of the principals, the program was beneficial to the participants in its effect on achievement gains of both low and high achievers, and on the development of self-direction and self-responsibility in the personal and academic life of the children. Pupils not participating were not harmed by their exclusion; more opportunities were given them for leadership and for the individualized attention of the teacher.

In regard to the effect of the program upon the regular classroom teachers, principals stated that these teachers benefited by the temporarily lessened teaching load, and in the stimulation toward better teaching given by the presence of the experimental classes. Principals of three of the four participating schools believed that a general upgrading of the school program was a concomitant benefit of establishment of such classes in their schools.

Disadvantages of the program appeared to center around problems of organization and scheduling.

Reactions of parents of participants in the program were in general favorable toward the classes and their objectives. Parents of non-participants evidenced little reaction, favorable or unfavorable, though one principal remarked on a negative reaction of some parents of children not in the program.

While principals were not requested to present a formal written evaluation of the program at the close of the second year, in frequent

conferences with the Consultant, they stated general approval of the program in regard to its effect upon both teacher and pupil. Sensitive to both negative and positive attitudes, relationships, and achievements of the faculty and pupils, principals again expressed gratification over the benefits accrued to the school through the presence of the classes; concern was this year expressed over the future selection of teachers for such classes.

Difficulties incurred in the organizing and scheduling of the part-time classes were alleviated this year by a revision of the mode of scheduling. Though problems were still present, principals felt that the second year's programming, both in content and in schedule, was superior to that of the initial year of the experiment.

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this experiment was to examine the relative effectiveness of different types of instructional and administrative organization in providing for academically talented pupils. Two types of instructional organization were established. One type involved self-contained classes and the other type was organized on a part-time plan. Self-contained classes were established in one school where the regular enrollment provided a sufficient number of eligible pupils to organize the sections. Self-contained classes were also established in another school where the pupils were transported from surrounding feeder schools. Two schools employed the part-time organization where pupils left their regular classes for work with a special teacher.

Selection of pupils to go into the experimental classes was based upon the essential criterion of a measured IQ of 120 and above, considered in connection with evidence relating to school achievement and adjustment.

The first hypothesis described earlier in this report was built around the question of whether or not differences, as measured by standardized achievement test, would exist between academically talented pupils in the experimental programs and academically talented pupils not in the experimental program. Achievement test results obtained at the beginning of the first year, at the end of the first year, and at the end of the second year, provide the basis for answering this question. The achievement tests used sampled achievement in Work-Study Skills, Reading, Language Arts, Arithmetic, American Heritage, People of Other Lands and Times, Basic Social Processes, and Elementary Science, Health and Safety. By exploring all of these different areas most of the subjects usually found in the elementary school curriculum were included. After the achievement test scores had been obtained and tabulated, the amount of gain over the two year period for the experimental and control groups was compared and tests of statistical significance applied. Twenty nine differences were found to be statistically significant. These 29 significant differences represent approximately 73 percent of the 40 comparisons made, and in each case the direction of difference was in favor of the experimental groups.

Although every comparison showed a significant difference in favor of the experimental group, the preponderance of the evidence indicates that, as a whole, the experimental groups achieved at a significantly higher level than the control group. This indicates that the hypothesis of no significant difference between the experimental and control groups would be rejected at the .05 level of confidence.

The second hypothesis was concerned with the question of whether or not pupils in the self-contained experimental classrooms would achieve at the same level as pupils in the part-time experimental programs. In order

to test this hypothesis the standardized achievement test results for the pupils in the self-contained classes at Hale Cook school were compared with the achievement test results for the pupils in the part-time classes at the Border Star and Bryant schools. Examination of these results shows that in only two instances were the differences between the part-time and the self-contained classes statistically significant. Only 14 comparisons were involved, since it was not possible to extend these comparisons through the grade 6 - grade 7 two-year span.

This analysis of the self-contained and part-time type of organization indicates that one is about as effective as the other. Therefore, the hypothesis of no significant difference in achievement, as measured by standardized achievement tests, between the self-contained classes and the part-time classes would not be rejected.

The third hypothesis was concerned with the question of peer acceptance for pupils in the part-time experimental programs, as compared with the pupils in the control groups, as to the number of times chosen in three different social situations. The three different social situations included choices involving pupils with whom the children would most like to study; the children with whom they would most like to play on the playground; and the children with whom they would most like to go to a party. Each child was asked to select the three people that would be most acceptable in these three situations, and to label their choices as first, second, and third. These results were tabulated and analyzed according to the total number of choices for the class as compared with the number of choices received by academically talented pupils. The results of these analyses indicate no significant differences between the number of times chosen for the academically talented pupils in the experimental classes as compared with the

academically talented pupils in the control classes. Therefore, the general conclusion would be that the peer relationships of the children in the experimental classes were not significantly affected by virtue of being in those classes.

In view of these findings, the hypothesis of no significant difference in peer relationships, as indicated by the number of times chosen in social situations, would not be rejected.

As part of the subjective evaluation of the experiment, questionnaires were completed by pupils, parents, teachers of experimental classes, and teachers of regular classes. Responses to these questionnaires were tabulated, and are reported in detail in earlier sections of this report. The general tone of the responses was to the effect that the pupils, parents, and teachers of experimental classes were favorably impressed with the results of the experimental program. Among the teachers of the regular classes there was noticeable diversity of opinion. Some teachers felt that the classes had been effective in raising the standards for all pupils, and they had also appreciated the opportunity to discuss ideas and techniques with the teachers of the special classes. Many of the ideas and teaching techniques emanating from the special classes were adapted to regular classroom situations. There was also an indication that new leadership qualities had developed among some children remaining in the regular classes. These comments came primarily from the schools in which the self-contained classes were established. From the schools operating on a part-time basis there were both positive and negative comments. Some teachers felt that there were carry-over values from the special classes to the regular classroom. Some indicated a better social adjustment of the pupils. Teachers in both of the schools operating on the part-time basis agreed that there were difficulties

arising from the necessary scheduling, and that the movement of children back and forth created problems in the prosecution of the work of the class. These difficulties in scheduling and movement of pupils constitute the great majority of objections to the experimental program.

The principals of the four participating schools were also asked to evaluate the program. Their evaluations indicate that they felt that the program was beneficial to the school generally, and that a general up-grading of the school program was a concomitant benefit of such classes being established in their schools. Expressions indicating increased insight and appreciation of the purposes and possibilities of such programs were expressed frequently. Their feeling as to the disadvantages of the program centered around problems of organization and scheduling.

As this experiment unfolded, certain questions and problems were raised that were not answered as part of this study, but which do need attention.

One of these points was concerned with the differential in achievement, as indicated by the pre-test, between the pupils in the Control A groups and their respective experimental classes, and the pupils in Control B and their respective experimental classes. Although selected on the same basis of measured intelligence, the pre-test scores for the pupils in the Control B constellation were at a noticeably lower level than the scores of the pupils in the Control A constellation. This has been interpreted as reflecting differences in the social-economic environment, with the pupils in the Control A constellation having received greater stimulation from their environment than had the pupils of the Control B constellation. However, when placed in the special situation with the special teacher in the experimental classes, the pupils of the Control B constellation moved rapidly toward the higher levels of achievement. So rapidly, in fact, that when

compared with the other groups on the basis of over-all gain in measured achievement, the pupils in the Control B constellation demonstrated the greatest growth over the two-year period. This helps to emphasize the generally acknowledged problem of making provisions for the isolated academically talented child.

Another question that came out of the experiences with this study is concerned with the selection of pupils to go into the program for academically talented. During this study, the responsibility for the selection of pupils to enter the experimental classes was shared by the Consultant and principal of the school. There has been some difference in expressed philosophy as to which children should be selected for inclusion. In some instances, the feeling is that those children who have demonstrated both high ability and high achievement should be the ones selected, and that those who have high ability, but have not applied it so as to reach high achievement, should not be included. On the other hand, some have felt that children with high ability, regardless of their demonstrated achievement, should be placed in the experimental classes, since it may be that the stimulation arising from this contact with other academically talented pupils would cause the previously low achiever to make better achievement. There is much to be said for both sides of the question. Basic to any of these provisions is the concept that pupils of high mental ability should be separated for special instruction, and that thereby greater depth and understanding would be achieved. However, it should be noted that when classes are built upon the selection of pupils with IQ 120 and above, the range of ability in such a class might well be as much as 30 IQ points or more. When it is recalled that approximately the middle two-thirds of the population scores within a range of approximately 32 IQ points, it is clear that classes

sectioned on the basis of IQ 120 and above would have a range of ability as great or greater than many regular classes. Therefore, to complicate the matter with the inclusion of children of high ability but with low achievement would tend to produce an unreasonable burden on the teacher, and contribute toward the defeat of the purposes for which the class was intended. On the other side of the argument, much has been said about the pressing need to identify and provide for the development of our national talent. Accordingly, to exclude a child from special consideration because he has not achieved at a level commensurate with his measured ability would appear to be acting in contradiction to the expressed need. In addition, if we subscribe to the philosophy that requires recognition of individual differences and appreciation of the accompanying necessity to provide the type of education which will stimulate the child to greatest achievement, to exclude from special provisions a child of high ability but with lower achievement would be a basic violation.

Also in connection with the selection of pupils some opinions have been expressed which indicate that the IQ cut point should be raised to at least 125. This would have the effect of reducing materially the numbers of pupils eligible for special placement, and, in addition, would help to alleviate the problem of great span of ability in the special classes.

Another point that has come out of the experiences of this study has to do with the appraisal of intangibles that appear to be present in the experimental situations, but which are not susceptible to the usual types of measurement. Pupil stimulation arising from the interplay within the class situation is certainly an important consideration. A visitor to the classes for the academically talented would notice this interplay very soon. The pupils do stimulate one another. They also require high standards of

performance from themselves and from the other members of their class.

Another question that arose was the manner in which the long-term results of this experiment might be studied. If these classes have value over and above the regular classes it should be demonstrable in the end product. The implication is that it would be desirable to follow these pupils through their high school experience, and to make comparisons with control groups at the time of their graduation from high school.

Another element that merits exploration has to do with the role of the teacher in classes for the academically talented. Traditionally, the teacher has been the person who has provided the source of information for the pupils. Teachers have been typically the "dispensers of information". In classes for the academically talented, the work of the teacher has usually been more productive when the role of guide and resource person has been assumed. The implication is a need for teacher orientation and training in working with academically talented pupils.

In the light of the findings of this experiment, certain recommendations are indicated.

1. Special provision for academically talented pupils should be continued.
2. Since the self-contained and part-time type of organization appear to be almost equally effective, the value accruing from reduction in problems of scheduling would probably make it preferable to move in the direction of the self-contained class.

In those schools where the pupil enrollment could provide the necessary membership for the classes, and where the atmosphere is conducive to the minimizing of problems of scheduling, the part-time type of organization can be quite effective.

3. The need for coordination of the work of the classes in providing the necessary administrative functions, in providing instructional materials, and in consulting with the teachers of the classes, points clearly to the desirability of continuing a supervisory position similar to that now occupied by the Consultant for the Education of the Academically Talented.
4. Provisions for the selection, placement, and release of pupils in the special classes needs to be examined carefully, and a clear policy statement defined.

APPENDIX A

REFERENCES AND NOTES

1. The SRA Achievement Series includes more than one level. The series for Grades 4-6 was used with pupils in the fourth and fifth grades, and the series for Grades 6-9 was used with pupils in the sixth and seventh grades. It may be that imperfect articulation between the 4-6 and the 6-9 series accounts for some of the difference between the 4-5 group and the 5-6 group as to the amount of gain measured.

2. Where:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{\Sigma X_1^2 + \Sigma X_2^2 - \left[\frac{(\Sigma X_1)^2}{N_1} + \frac{(\Sigma X_2)^2}{N_2} \right]}{N_1 + N_2 - 2}} \sqrt{\frac{1}{N_1} + \frac{1}{N_2}}}$$

3. Gronlund, Norman E., "Sociometry In The Classroom", Harper and Bros., New York, 1959, pp. 65.

APPENDIX B

FEEDER SCHOOLS TO SCARRITT

1. Feeder Schools, 1958-59

Banneker	McCoy
Garfield	Thacher
Henry Clay	Whittier
James	Yeager
Kensington	Gladstone

2. Feeder Schools, 1959-60

Ashland	Karnes
Attucks	Kensington
Banneker	McCoy
Henry Clay	Thacher
Garfield	Whittier
Gladstone	Woodland
James	Yates
	Yeager

APPENDIX C

PUPIL REPORT TOPICS

<u>TOPICS REPORTED ON</u>	<u>Grade Four</u>	<u>Grade Five</u>	<u>Grade Six</u>	<u>Grade Seven</u>
Astronomy	Jupiter	Mars Venus Moon and Asteriods Saturn - Jupiter Sun Moon	Astronomy	Solar Eclipse Formation of Solar System
Biography	Famous People Florence Nightingale Joan of Arc Wright Brothers Francis Marion Lee and Grant Walter Reed Nancy Hanks Pocahontas Harriet Beecher Stowe Robert Fulton Madam Curie Lewis and Clark Mozart	Paul Revere Abraham Lincoln Pocahontas - John Smith Daniel Boone Theodore Roosevelt Hitler Famous Saints Geo. Washington Dwight D. Eisenhower Alexander Bell Harry Houdini P. T. Barnum	Geo. Washington Carver Socrates Sir Walter Raleigh Longfellow Julius Caesar Da Vinci Rembrandt Louis Pasteur Albert Einstein Thomas Edison Charles Lindbergh David Livingstone Martha Washington Dolly Madison Eleanor Roosevelt Ringling Brothers	Clara Barton Theodore Roosevelt Joan of Arc General Custer Robert E. Lee Frank Lloyd Wright Norman Rockwell Helen Keller Walt Disney Mendelssohn Bach and Beethoven Stradivarius

PUPIL REPORT TOPICS

<u>TOPICS REPORTED ON</u>	<u>Grade Four</u>	<u>Grade Five</u>	<u>Grade Six</u>	<u>Grade Seven</u>
Biology	Cats Chipmunks Dogs Squirrels Whales Seashells Horses Bird Migration	Beavers Insects Mistletoe Plankton Stegosaurus Pre-Historic Cave Man Cats Koala Bear Hamster Snake	Evolution Donkeys Parakeets Evolution of Animals Mold Insects Horses of America Common Marine Life Dogs Cats Ants Bees Frogs Koala Bears Passenger Pigeons Abominable Snowman American Grapes Botany Cactus and Similar Plants Flowers Cranberries	Koala Bears Dinosaurs
Business and Professions	Secret Service	Clothing Air Force Steel-making Lawyer Margaret W. Brown		Wool

PUPIL REPORT TOPICS

<u>TOPICS REPORTED ON</u>	<u>Grade Four</u>	<u>Grade Five</u>	<u>Grade Six</u>	<u>Grade Seven</u>
<u>Customs</u>			Witchcraft Superstition New Years	Superstition
<u>Education</u>		U. S. Naval Academy Yale	Perkins Institute How to Remember History of Mathematics	Homemaking in Elementary School Air Force Academy
<u>Fine Arts</u>			Music Puppets and Marionettes Roman Architecture History of Music Guitars	Evolution of Music Ladies' Costumes
<u>Geography</u>	Norway Japan Switzerland Arabia Luxembourg Hawaii Africa Cuba Alaska	Lost Kingdom of the Himalayas Lake of the Ozarks Wichita, Kansas Washington, D. C. Brazil Hawaii Iceland Yellowstone Park Nigeria	Pompeii Tower of London France Easter Island Florida Cities of Florida Hawaiian Islands California	Mt. Vesuvius Eiffel Tower Leaning Tower Mississippi River Scenic Wonders
<u>History -Government</u>	Boston Tea Party Battle of Gettys- burg Custer's Last Stand Battle of Westport	Communism	Titanic Hist. of Communism Archaeology Mints and Money System Truman Library Branches of Govt. Trojan War	Bureau of Engraving and Printing French Government Relationships Between Americans and Cubans Theory of Communism Attitudes Toward the Russians 1960 Census New Stars for Old Glory Government of the People

Continued

APPENDIX C

PUPIL REPORT TOPICS

<u>TOPICS REPORTED ON</u>	<u>Grade Four</u>	<u>Grade Five</u>	<u>Grade Six</u>	<u>Grade Seven</u>
Mathematics		Weights & Measures		
Mythology		Greek and Roman Myths Hercules		
Physical Science (Applied and Basic)	Rifles Coke Ball Point Pens	Magnetism Radio Light Bulb Radio Clocks and Watches Rocks and Minerals Glass Synthetic Materials Rubber Weather Atom Bomb Volcanoes	Submarines Guided Missiles Dynamite Rubber Mfg. History of Clocks Tornado Cellophane Electricity Dams Formation of Earth String of Air Canopy of Air The Atom	Missiles Air Craft Carriers Bridges Engineering Guns Atomic Energy Rubber Space Satellites Minerals Pepper Submarines Liquid Fuel Rockets Solar Energy Hurricanes Volcanoes
Physiology and Health		Human Brain	Black Plague Respiratory Diseases Water Purification Veterinarian Medicine Water Supply	Nutrition Wonder Drugs Heart Osteopathy Psychology
Recreation		Bowling	Training Horses Skin Diving Magic Baseball Stamp Collecting Shop Trampolines	How to Care for, train and ride a horse. Coin Collecting Olympic Games Expositions and Fairs
Religion			Moslem Religion	